Senior Secondary Course

373 – Physical Education

Book-1

373en

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NIOS SENIOR SECONDARY - PHYSICAL EDUCATION (373)

Complete Textbook (22 Lessons)

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Note

1

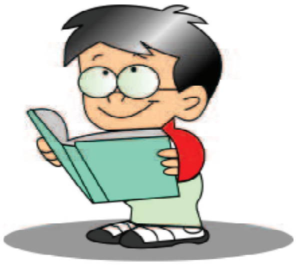
INTRODUCTION AND HISTORICAL DEVELOPMENT

Imagine that you own a time machine and have travelled back to those days when your great grandparents were children. The lifestyle of those people were physically very active and vigorous. The main activity was running, throwing and jumping for survival i.e. a man was running for search of food, safety and arrange basic needs of life. With the passes of time Kingship introduced the military and war training for supremacy, to prepares their army for war and other battles. Later on in the present era it has transformed to individual fitness, wellness and good health. In this context, the Indian Government has focused on citizen's health by introducing various programme of physical training, physical assessment under physical education programme as well as has introduced celebration of International Day of Yog, i.e. 21st June every year.

In this lesson you will learn meaning and importance of physical education and yog and its historical development in details.

OBJECTIVES

After studying this lesson, you will be able to:



- explain the meaning and importance of Physical Education;
- describe the historical development of Physical Education;
- explain the concept of Yog;
- explain the historical development of Yog and
- assess the need and importance of Yog.

1.1 MEANING AND IMPORTANCE OF PHYSICAL EDUCATION

Physical Education is the combination of two words – Physical and Education. The word physical refers to body, and indicates bodily characteristics such as

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strength, speed endurance, flexibility, health, coordination and performance. It generally contrasts the body with the mind. The word ‘education’ means systematic instructions or training or preparation for life or for some particular assignments.

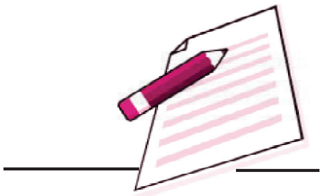
Physical Education is a science of complete development of the individual by participating in physical activities and sports.

Do you know?

Physical Education is now a days connected with biological, sociological, psychological, philosophical, political and cultural aspects of life. It deals with totality of human behaviour which makes man different from other species.

Today, Physical Education is defined as an educational process that uses physical activity as a means to help individuals acquire skills, fitness, knowledge and attitudes that contribute to their optimal development as well being, (Wuest & Bucher 2010).

Physical education contributes towards the development of the individual by participating in physical activities and sports, thus Physical education is very important.



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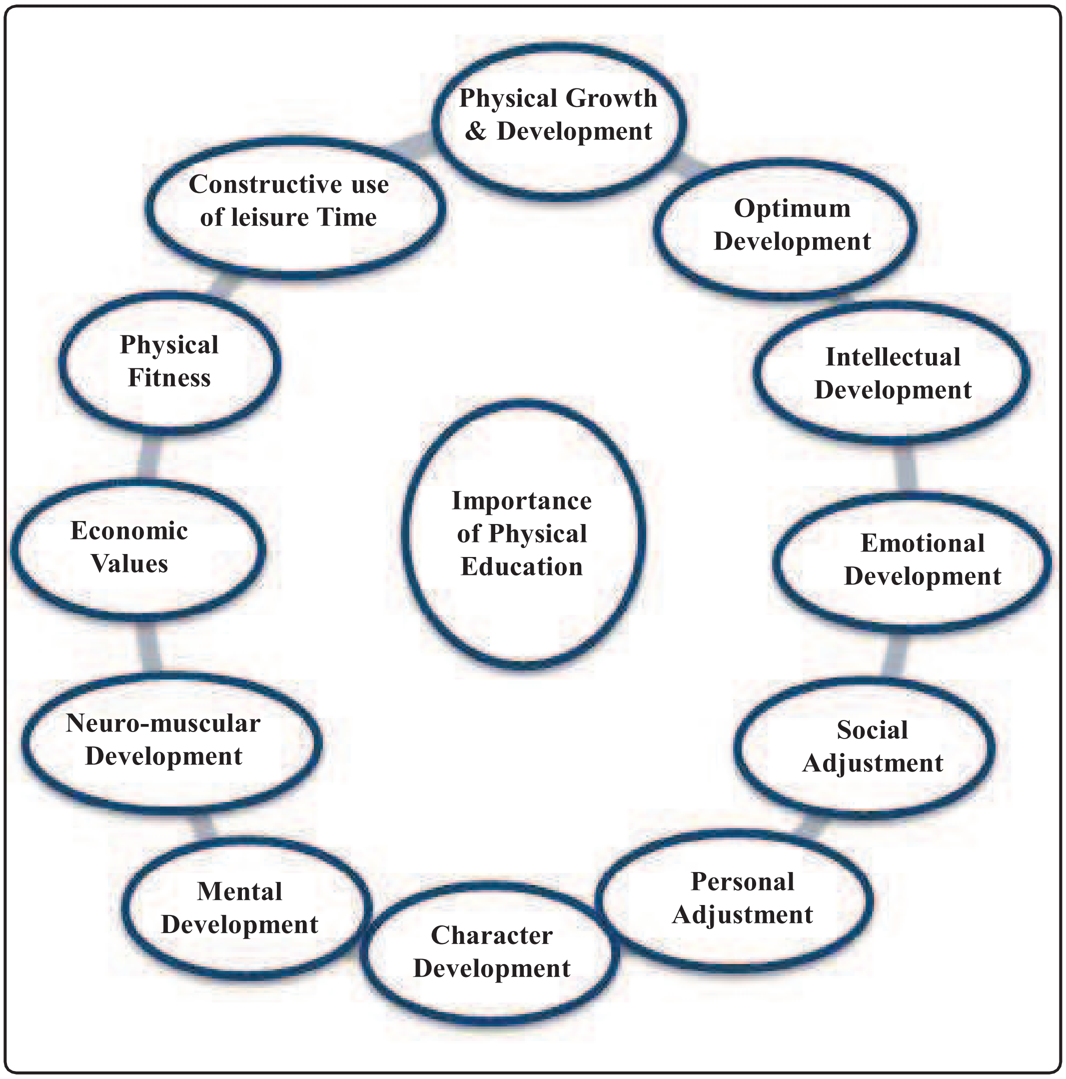
1.1.1 Importance of Physical Education



Physical growth and development- Physical activity is a necessary step to develop the proper function and growth of the human body.

Optimum development- Physical education deals not only with physical growth but also helps us to improve in all parameters of development such as Physical, Mental, Social and Emotional development by participating in physical activities.

Intellectual development- Physical activities also improve the intellectual ability. For example players need to take decision in different conditions and situations; that ability helps them to improve their thinking.

Emotional development – Physical education and sports provide opportunities to control emotions. For example, a particular match incident gives you a maturity to execute yourself as a tough player.

Social adjustment- Physical activities also provide opportunities of interaction with others and participation in varied situations enabling them to learn social qualities like sportsmanship, co-operation, honesty, friendship, fellowship, courtesy, self-discipline and respect for authority which promote social adjustment of an individual.

Personal adjustment- Physical education gives worth-while experience to an individual to realise her/his full potential and has self-expression and highest satisfaction which facilitates his personal adjustment in life.

Character development- Group efforts, loyalty, dedication, discipline and determination help to build a good character of the individual.

Physical Fitness- Physical education through scientific mode of exercise and knowledge about one's body and its requirement contribute immensely to physical fitness. Systematic and scientific physical training helps to improve the physical fitness of the individual.

Mental development- The physical activities not only help to improve the physical development but also the mental development of the individual; For example a badminton player is good in physical fitness, but smash comes from mental development.

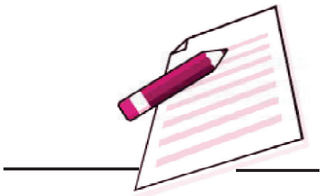
Neuro-muscular development- Through physical activities an individual learns to co-ordinate the muscular and nervous systems. Neuro-muscular coordination develops well only if various types of skills and exercises are done repeatedly for a long period of time. A good neuromuscular coordination is indispensable for learning skill.

Constructive use of leisure time- Physical education contributes to the constructive use of leisure time. Parents are motivating their children to utilize their leisure time in a particular manner so that a child doesn't get the chance to indulge in non-productive activities like roaming, or wasting time.

Economic value- Nowadays sports have become commercial. Each and every game is organising its own professional league, which not only helps to promote the game, but also helps to improve the financial position of the player, which ultimately improves the career opportunities in sports.

ACTIVITY NO.1.1

Make a chart of five activities for physical development of children.



INTEXT QUESTIONS 1.1

1) Mark the following statements as true or false:

   i) Physical Education and sports are not related with overall personality True/False

   ii) The word physical refers to body, and indicates bodily characteristics True/False

   iii) Physical activities are a key to success in respect to health True/False

   iv) Physical activities improve children's scientific insight of thinking True/False

   v) Physical activities provide opportunity to learn qualities like sportsmanship and self-discipline True/False

2) Explain the importance of physical education in day to day life.

   ....

   ....

1.2 HISTORICAL DEVELOPMENT OF PHYSICAL EDUCATION

History reveals that the emphasis in the past had been more on exercises such as swimming, archery, wrestling, javelin, discuss, horse-riding, sword fighting and many more. Later on it came to Gurukuls, and schools. The history of physical education can be studied in different periods of Indian political history; which may be divided into the following periods.

i) Ancient

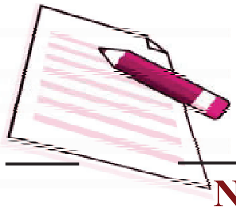
ii) Medieval

ii) Modern

iv) Post-Independence

1.2.1 Ancient Period

The Vèdas are not only religious books, they also contain reference to the social and political life of the people. Archery, horse riding and chariot racing were common sports during this age. In fact, these sports were meant not for pleasure



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only but were devices of war as well. Yog seems to have originated during this period.

The exploits of the Indians of this period can be gathered from the 'Ramayana' and the 'Mahabharata', which were composed during this period. Both epics reveal that this period was a period of great turmoil and wars. On the other hand the system of education was quite elaborate. This system had physical education as one of the compulsory items apart from scriptural studies, Archery, Javelin throwing, sword fighting, club fighting, wrestling, horse riding and chariot racing have been described in these books. The names of such warriors as Ram, Laxman, Ravan, Megghanad, Bhima, Arjuna, Karna, Bhisama, Drona etc. have become immortal for their valour. There were no separate teachers for physical education; but the knowledge of arms and armaments was given by the same teachers who were well versed in scriptural studies too. There used to be Gurukuls (Schools) where pupils lived life upto the age of 25 years and learnt physical and mental fitness.

Meghasthenes who visited India during the period of Chandragupta Maurya has referred to a very elaborate system of physical training for the army. Wrestling, sword fighting, Javelin throwing, horse racing etc. were very common sports in those days. Training in the art of war was both intensive and extensive. Ashoka the great king had a very strong army which shows that war training was both intensive and extensive during this period.

Nalanda was a great city of learning where more than 6000 students, from different parts of the country, and also from foreign lands used to study. Along with religious and philosophical studies, physical education was given due emphasis and was taught to students in a systematic manner. Besides 'Pranayama' and Surya namaskar other forms of physical exercise were perfomed every day throughout the year. At Nalanda University-Swimming, breathing exercise and yog had became an integral part of the daily life of the students. India, during this period, was a land of noted men for the excellence of their physique and sharpness of their intellect.

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The Rajputs were divided into hundreds of clans and often fought among them selves. There was no central authority; however they remained supreme up to 13th century. The Rajputs called themselves pure Kshatriya and their profession was fighting. Horse riding, Javelin throwing, archery, wrestling, hunting and mace fighting etc. were very popular activities. Girls were also taught to ride a horse without saddle. Dancing and Music have been a part and parcel of the Rajput life.

DO YOU KNOW ?

Great emphasis was laid on the military and physical art during Ganga dynasty in Orissa.

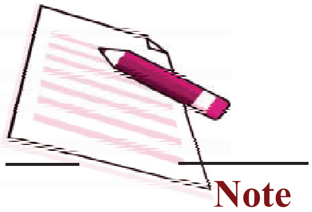
1.2.2 Medieval Period

Muslims ruled India for about 600 years. They were very fond of sports. Sports like wrestling, boxing, polo, rugby, shooting, archery, swimming, sword fighting, chess, horse riding, and Javelin throwing were popular during medieval period. Hunting, pigeon flying and animal fighting were also very popular during the period.

1.2.3 Modern Period

Physical education had always existed in the Indian society in one form or other, but had never been considered a part and parcel of school curriculum. No doubt the English men were sports loving people, yet they also did not pay any attention to the inclusion of physical education in the school educational programme. In 1833, Government of India shouldered the responsibility of education and in 1870, education was made a state subject, the centre only retained the supervisory powers. For the first time in 1882, the Indian Education Commission recommended physical training in school education. It recommended that physical training be promoted in schools by encouragement of native games such as gymnastics, drills and other exercises. This spurred the interest of the school children to take to physical activities

Private organisations for physical education like gymnasia, Vyayam-Shala, Akhadas and Kreeda mandals contributed much for the spread of traditional interest in the subject. Danda, Baithaka, folk dances, wrestling and exercises with light apparatus received greater attention. Indigenous games like Kho-Kho and atye-patye also became popular. Physical education such as drills and P.T. exercises were imparted in some schools by ex-servicemen. They also prepared the students as Scouts for school ceremonies. The outstanding development of physical education in pre-independent India goes to the Y.M.C.A., College of



Note

Physical Education, Madras. Y.M.C.A was founded in 1920 by Mr. H.C. Buck. In 1931, the Govt. College of Physical Education, Hyderabad and in 1932, The Christian College of Physical Education, Lucknow, were established. In 1938, The Training Institute of Physical Education, Khandiyali (Bombay) also came into existence. In 1914, 'Vyayam Prasarak Mandal ' Amaravati, was set up to serve the cause of Physical education in India.

1.2.4 Post- Independence Period

India regained her freedom in 1947; This necessitated the formulation of new educational policy to build up a new nation. The subject of education was entrusted to the states and the centre retained with itself the matters of co-ordination and formulation of national policy on education keeping in view national objectives. A large number of schools were established in the country. Education was made free and compulsory up to the age of 14 years. Hundreds of new colleges and universities came into existence to meet the needs of the country.

Netaji Subhash National Institute for Sports (NSNIS)

National Institute of Sports was established by the Government of India for academics and coaching in sports. Now it is renamed as Netaji Subhash National Institute of Sports, in 1973. It is in Patiala.

National Discipline Scheme

The National Discipline Scheme came in to existence on July 24, 1954 at Lajpat Nagar, New Delhi. It was in 1965 that N.D.S. was merged with A.C.C. (Auxiliary Cadet Corps) on the recommendation of the Kunzuru Committee. Finally this scheme came to be known as National Fitness Corps (N .F .C).

National Caded Corps (NCC)

The N.C.C was introduced in the year 1948 by an act of the parliament. Since then it has expanded in the whole country. The scheme was operated by the Ministry of Defence in co-operation with the state governments, through the Director General of N.C.C. It consisted of three sections i.e. senior, junior and girls.

Indian Olympic Association (I.O.A.)

In 1927, the Indian Olympic Association came into existence. Since then it has been functioning in India and is affiliated with the International Olympic Committee.

Compulsory Physical Education in Schools

In 1962, after the Indo-China war, the government of India decided to give serious consideration to a scheme of compulsory physical education in schools. It was

the policy of the government to rely on the strength of the army in all matters of defence. But the aforesaid experience showed that the second and third lines of defence must always be replenished by recruitment from the general public. For this a new integrated scheme of compulsory physical education was scheduled to be put into effect from July 1963. The planning commission made a provision for six crores and forty lakhs for the implementation of the new scheme. The scheme covered all students from class VI to class X. Five periods of not less than 45 minutes each were to be devoted to physical training. However, the scheme failed to come into force in its true spirit. In 2018 CBSE made Physical education a comulsory subject from IX to XII standard in Schools as mainstreaming physical education (MPE)

Note

ACTIVITY NO.1.2

Make a chart for regional indigenous games that originated in India.

INTEXT QUESTIONS 1.2

1. Tick (✓) the correct option.

   i) Which age is famous for ‘Ramayana’ and ‘Mahabharata?

      a) Vèdic b) Nalandian c) Epic

   ii) ‘Jainism’ and ‘Budhism’ are related to which historical age?

      a) Vèdic b) Historical c) Epic

   iii) Kshatriya are related to which historical age?

      a) Rajput b) Historical c) Epic

   iv) In which year was the YMCA college of education founded?

      a) 1920 b) 1921 c) 1923

   v) Who was the founder of Y.M.C.A. college of education?

      a) H.C. Buck b) A.C. Buck c) C.H. Buck

2) Write the full form of NCC, NSNIS and IOA.

   a) ....

   b) ....

   c) ....

Note

3) Ram, Laxman, Ravan, Megghanad, Bhima, Arjuna, Karna, Bhishma, Drona are famous for which historical age?

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1.3 CONCEPT OF YOG

The word 'yog' is derived from Sanskrit 'Yuj', which means to join, to attach, to bind and yoke, and to concentrate on one's attention. Yog means the experience of oneness or unity with inner being. The unity comes after dissolving the duality of mind and matter into the supreme reality. It is a science by which the individual approaches truth. Yog is a way of a better living. It ensures greater efficiency in work, and a better control over mind and emotions. Through yog one can achieve both physical and mental harmony.

Yog is a way to achieve the supreme goal of peaceful life

In Bhagvad Gita the main stress is on Karma Yog (Yog by action). "Work alone is your privilege, never the fruits thereof. Never let the fruits of action be your motive; and never cease to work. Work in the name of lord, abandoning selfish desires. Be not affected by success or failure. This equipoise is called yog."

In this fast materialistic world, "the practicing yog helps to develop balance the body and mind. it is not a substitute for medicine. It is advisable to learn and practice yog under the supervision of a trained yog teacher"

DO YOU KNOW?

Pranayama is a yogic exercise by which one balances the breathing cycle in such a way that there is complete or control of the breath and it is through this that the old sages had the transcendental experience.

1.4 HISTORICAL DEVELOPMENT OF YOG

As per Hindu mythology, lord Shiva is considered as the founder of yog. He narrated the science of health to his wife Parvati and later passed it on to sages for the upliftment of human beings. For a clearer understanding of yog as an Indian heritage one should go through related periods of history:

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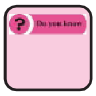
1.4.1 Pre-vedic Period (6000-3000 BC)

Indus valley civilization reveals that different forms of yog were practiced in those periods. Several seals were discovered at Indus Valley civilization (3300-1700 BC) sites depicting figures in yog – or meditation-like posture.Archaeologist points to 16 specific "yogic poses". The idols as well as statues, which were found in excavation, depict various yog postures. The language used in Indus valley civilisation is still unknown to us, but still it is sure on the basis of idols that yog was performed during that period.



DO YOU KNOW ?

The definition of an archaeologist: A person who studies human history, particularly the culture of historic and prehistoric people, through discovery and exploration of remains, structures and writings.

1.4.2 Vèdic Period (2000-1500 BC)

The study of Vèdas reveals that there were some partially developed concepts of yog in this period. Vèdas do not directly mention the word 'yogis' or 'yog'. In Rigvèda the usage of word 'Yunjate' suggests an idea of yog for sense control.

1.4.3 Upanishadic Period (800-200 BC)

In the Upnishads, an early reference to meditation is made in Brihadaranyaka Upanishad. The main textual sources for the evolving concept of Yog are the middle Upanishads, the Mahabharata including Bhagwadgita and the yog sutras of Patanjali. Many examples of the concept and terminology of yog appear in the upnishads.

1.4.4 Epic Period

Epics – Ramayana and Mahabharata are the important sources of information about the yogic practice in that era. The Sage, Vishwamitra taught, Ram and Lakshmana, the art of yog and prāṅāyāma. Lord Krishna narrated yog to his disciple Arjuna in the battlefield. The term 'yog' has been used in BhagwadGita in a variety of senses – Karma yog (the yog of action), Bhakti yog (the yog of devotion and Jnana yog (the yog of knowledge).

1.4.5 Sutra Period

All the credit goes to Patanjali, who gave us the present literary form of yog in 'Yogsutra' approximately in 147 B.C. The Yogsutra is divided into four books. He explained eight parts of yog, such as Yama, Niyama, Asanas, Prāṅāyāma, Pratyāhāra, Dharna, Dhyana and Samadhi.

Note

1.4.6 Smriti Period

Smrities were written in about 1000 AD. The literature of this period shows changes in beliefs, ideas, worship, rituals and customs. In most of the rituals pranayama and other purification techniques find important place those writings.

1.4.7 Medieval Period

In this period, two cults were famous – Natha cult and bhakti cult. Hatha yog finds its evolution and fame in Natha cult. Hatha yog is a particular system of yog. The saints of these periods used to do various yogic practices.

Modern Period: Yog has taken up a new shape in the twentieth century which is contrary to its history of life-long devotion. The yog practiced in modern time is implementation of the techniques to strengthen mind and body. It is practiced to keep mind and body healthy. Yog is now spreading all over the world.

DO YOU KNOW?

21st of June of each year is celebrated as International Yog Day. This was declared by the United Nations General Assembly on 11th of December in 2014.

1.5 NEED AND IMPORTANCE OF YOG

The goal of yog is to attain the physical and mental wellbeing. In order to accomplish it, yog makes use of different movements, breathing exercises, relaxation techniques and meditation. Yog is a way of living with health and peace of mind. Mind/body awareness can influence mood and self-esteem to improve quality of life. Yog is the perfect way to ensure overall health and physical fitness. Some benefits of yog have been listed below:

- **Physical purity and cleanliness of Organs:** It massages all the internal organs and glands. This in turn reduces the risk of many diseases. Basically there are three types of substances in human body – pit, vat and kaph. Various kriyas like jal neti, kapaal bhaati, tratak, etc, help to clean internal as well as external organs. Yogic exercises improve bowel movement and relieve constipation.
- **Cures and prevents diseases:** Yog is one of the best remedies known to humankind for curing chronic ailments that are otherwise difficult to be cured by other medications. Yog has been used to alleviate problems associated with high blood pressure, high cholesterol, migraine headaches,

Note

shallow breathing, constipation, menopause, multiple sclerosis, varicose veins and many chronic illnesses.

- **Reduces mental tensions, fatigue and stress inducing relaxation:** Yog offers different techniques as proven therapies for illness and stress. Yogic exercises and deep breathing can reduce stress, thereby lowering blood pressure and induce relaxation. Yog brings stability to the wavering mind and reduces physical and mental fatigue.
- **Increases Concentration and self-control-** The yog trains the body and mind to work towards a single goal with concentration. Various asanas like padmasana and Dhanurasana help in improving concentration power.
- **Improve productivity in life-** The daily practice of Yogic asanas and pranayam will help you to improve your concentration power, which ultimately helps to improve your work proficiency and productivity.
- **Prevention from Injury and Rehabilitation-** Yog asana also help to recover from injury and to rehabilitate.
- **Improve the immune system-** The daily yogic practice helps to improve the immune system.
- **Improve the Sports Performance-**Yog plays a vital role for maintaining and improving the performance,where concentration and balance is required.
- **Better lifestyle-** The joy and happiness of life will come through peace of mind. Yog asanas and meditation help to improve your overall personality which gives a good quality of life.
- **Keep the correct posture of body**-Now a days postural deformities are common in individuals. Without good posture they are unable to do their work efficiently. They cannot enjoy life. They usually put more energy in simple tasks. Posture deformities can be corrected by some yog-asanas like Vajrasana, Bhujangasana, Dhanurasana, Chakrasana etc. These are not only preventive but curative also.
- **Yog can be performed by a layman–** Yog is an easy exercise in modern fast moving world, people always have an excuse that, they don't have a time for gym or walk, but yog is a very simple form of exercise, they can do any where, preferably in open air.
- **Reduces Obesity-** Obesity is a worldwide problem and India is at number three in the world, Obese people have high risk of related diseases. Yogic exercises and pranayama can help in reducing obesity. The cause of obesity can be found in your food habit, lifestyle or stress; Yog could be the answer to these problems.

- **Increases flexibility-** For sports and non-sports person, flexibility is a very important parameter for the personality. Sportspersons can improve their performance by increasing the Range of Motion (R.O.M.) and non-sports persons can improve their efficiency by increasing their flexibility. All these processes will improve with the help of exercises and yog asanas.
- **Provide relaxation-** Rest and relaxations are essential for removing fatigue from the body. Fatigue can be a mental or physical. Yogic asanas will help you to reduce the fatigue level, both mentally and physically.

INTEXT QUESTIONS 1.3

1) Mark the following questions as true or false.

    i) Yog can impede the internal organs of the body — True/ False

    ii) Yog can help us to cure and prevent diseases — True/ False

    iii) Meditation will help to increase the mental stress — True/ False

    iv) Padmasana will help to reduce your mental pressure — True/ False

    v) Yog can help to reduce your obesity — True/ False

    vi) Yog can decrease your R.O.M. — True/ False

2) Explain the importance of Yog in day to day life.

    ....

    ....

WHAT YOU HAVE LEARNT

- Physical Education is the combination of two words – Physical and Education
- Physical Education is a key to success in fast moving materialistic digital world of today.
- Physical education not only deals with physical growth but also helps to improve in all parameters of development such as Physical, Mental, Social and Emotional development by participating in physical activities.
- Physical Education is now a days connected with biological, sociological, psychological, philosophical, political and cultural aspects of life. It deals

with totality of human behaviour which makes man different from other species.

- Now a days sports have become commercial. Each and every game is organising its own professional league, which not only helps to promote the game, but also helps to improve the financial structure of the society, which ultimately improves the career opportunities in sports.
- Pranayama is a yogic exercise by which one balances the respiratory cycle in such a way that there is complete 'Suppression' or control of the breath and it is through this that the old sages had the transcendental experience."
- In the British period for the first time in 1882 the Indian Education Commission recommended physical training in school education.
- Private organisations for physical education like gymnasia, Vyayam Shala, Akhadas and Kreeda mandals contributed much for spreading traditional interest in the matter. Dandas, Baithakas, Yogic exercises, folk dances, wrestling and exercises with light apparatus received greater attention.
- In 2018 CBSE has made Physical education compulsory subject from IX to XII standard in Schools.

Note

TERMINAL QUESTIONS

1) Explain the meaning and importance of Physical Education with suitable examples.
2) Describe the historical development of Physical Education in Indian perspective.
3) Explain the concept of yog.
4) Describe the historical development of Yog.
5) Explain the need and importance of Yog.

ANSWERS TO INTEXT QUESTIONS

1.1

1. True/False
   i) False
   ii) true
   iii) true

Note

iv) true

v) true

2) Physical education helps to develop the overall personality including Physical, mental, social, and emotional health which ultimately improves your productivity and lifestyle.

1.2

1. Mark any one

   i) c

   ii) b

   iii) a

   iv) a

   v) a

2. The NCC, NIS and IOA stand for.

   - National Cadet Corps (NCC)
   - Netaji Subhash National Institute for Sports (NSNIS)
   - Indian Olympic Association (IOA)

3. Epic

1.3

1. i) False

   ii) True

   iii) False

   iv) True

   v) True

   vi) False

2. These days yog is getting popularity among masses; people who don't have a time for exercise, or are busy with their occupation schedule can easily approach for yog any time or any place. Yog improves in many ways.The physical purity and cleanliness of internal organs is done by doing pranayama and kriyas, stress and tension can be reduced by doing meditation and dhyan, Yog asnanas also help to correct the body posture deformity. Daily practice of yog improves the productivity of the individual.

Note

2

ETHICS AND VALUES

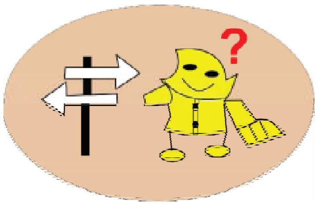
The school team was not performing to its abilities and was losing regularly due to lack of physical fitness. The team players had heard about performance enhancing medicines and started taking harmful substances without consulting their coach. Their physique changed and fitness increased, but their rate of injury also increased over time. They started to face various health issues and problems which became a problem for their regular training. The coach, initiated a check program and identified the problem of athletes using anabolic steroids. The coach talked with the athletes during a player's workshop and addressed the issues and showed his concerns.

What did the coach address as the issues and concerns? Was it an issue of ethics and values or it concerned sportsmanship? Let's read this chapter and understand about ethics, values and sportsmanship

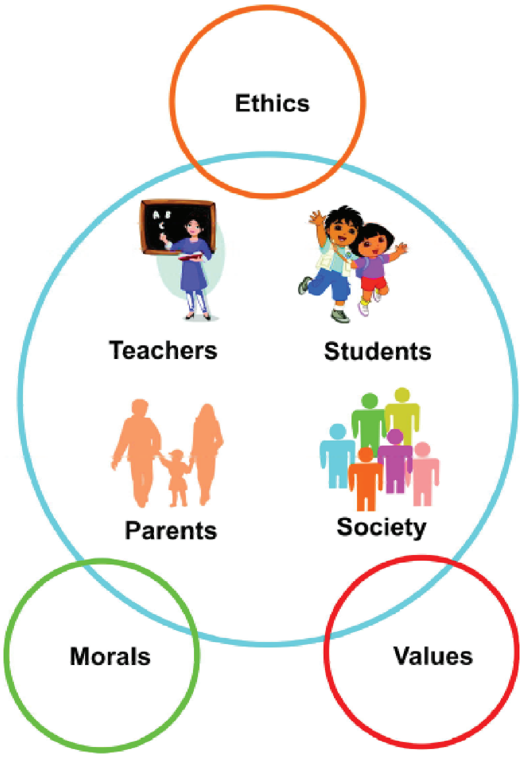
The generally accepted set of moral principles are known as **Ethics**. 'Moral' means the goodness and badness or right and wrong in action. Whereas, **Values** are personal standards which are valuable and important for an individual.

What are Values?

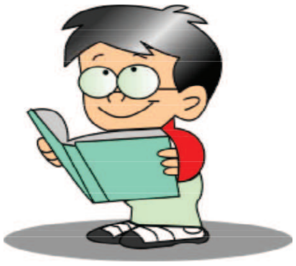
- Something that is desirable, worthwhile, and important in persons' behaviour and attitude.
- Are influenced by family, friends, teachers, coaches, television and movies.
- Each person has different values which guide his/her daily decisions



Sports education is an important part for the development of ethical values. Moral education promote's values and ethics for children and young people within the framework of the child's right to education. It is the responsibility of teachers to inculcate ethical values in schools and parents are responsible to promote the ethical values.



OBJECTIVES



After studying this lesson you will be able to:-

- explain the meaning of sportsmanship;
- highlight the ethics in sports;
- explain the Olympic values and
- learn the social and personal ethics through yog and sports.

Note

2.1 CONCEPT OF SPORTSMANSHIP

Sportsmanship is a concept in sports that focuses in enjoying physical activity or sports through fairness, ethics, respect, self-control, courage and sense of fellowship with opponents. A "sore loser" refers to who does not accept defeat well, whereas a "good sport" means a "good winner" as well as a "good loser". Sportsmanship is an ethical approach towards sports. Healthy competition is viewed as a way to foster character, quality, and personal honour. This helps in developing a behaviour that contributes towards trust and respect in society and between competitors. Sportsmanship goal is not just to win but to give best efforts and to honour the result of the game. The concept of sportsmanship helps in developing character through sports.

"Sportsmanship" is a behavior and attitude that show respect for the rules of the game and other players. Teams are praised for their sportsmanship and fair play. When the sports and activities are enjoyed with proper consideration of ethics, respect, fairness and sense of fellowship with competitors then it becomes the example of sportsmanship..

Note

Example: **Shaking Hands: Shaking hands with the opponents after the match is considered as a symbol of good sportsmanship.**

"Suppose there are two teams who are going to play a football match. Before the match starts they shake hands with each other and also with the referees. Once the match is over they repeat i.e. they shake hands, give high five to each other; no matter which team has won the game. This is called the true sportsmanship"

INTEXT QUESTION 2.1

Fill in the blanks to make the sentence meaningful.

a) Behavior and attitude that show respect for the rules of a game and for the other players is known as ....

b) The sports and activity can properly be enjoyed with ...., ...&...................................., ...

c) ....with opponents after the match is considered as a symbol of good sportsmanship.

2.2 ETHICS IN SPORTS

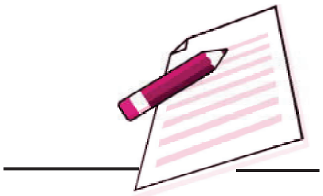
Ethics are the principles, basis or foundation of a set of morals and values that form the character of each person through action, into their way of being. Ethics is thus the behavior and ways of life through which individual tends to realize the value of the goodness. There are four key ethics in sports: fairness, integrity, responsibility and respect.

Fairness

Player as well as coach must follow the rules and regulation of their specific game. The rules must be applied equally to both teams by the referees; personal interest or biasness should not be seen in results. Any person cannot be eliminated of the basis of sexual orientation, gender or race. Integrity of sports is violated when player or coach use unfair advantage over their opponent.

Integrity

Any means and methods used by opponent that are against the integrity of game or sports spirit show lack of integrity on that person's part. An example of football may give the clear picture, whenever a player fakes foul or injure during game,



Note

the player is not behaving in the spirit of games, such things happen to cheat an official to make poor call.

Responsibility

Coaches and players must take responsibility for their actions on or out of the field. During a career of sports players often face defeats and most of the times they have excuse of poor officiating instead of different aspects of game like their performance, fitness etc. They have responsibility to update themselves from all rules and regulation of their sport. Coaches and players are responsible for their conduct not only on the fields but off the field also.

Respect

Players and coaches should show respect to officials, opponents, and teammates. To accept official's decision at ease is another form of respect. Parents, relatives and fans should show respect to officials and players of other teams

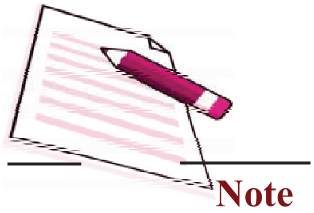
Sports offer the chances to learn 'what **team work**' is, beginning with getting to **know people** well over time. They offer **skill building**, **ethic development**, and the benefit of **regular exercise**. Through sport children do **learn how to win and lose graciously and handle disappointments.**

For example a girl used to play football. She learned from the children involved in her football team **how to stay positive**, when things do not work out during play. However, by observing she also learnt that few people manipulate rules for their benefits.

She loved football, studied it, and wrote about it . She observed the sports a lot like LIFE. There were moments of unfairness and happenings, a player could not control. She chose to focus on what she could control, on her attitude and efforts. Learning to live life through playing sports is the gift she got from sports. Sports do inculcate ethics and values.

Ethics

- The word 'ethics' is defined as "moral principle that govern or influence a person's behavior".
- Ethics is a benchmark of human behavior.
- The conduct of human beings is influenced either by the emotions or the actions people perform in different situation
- The coordination of action and emotions generates eithics.



INTEXT QUESTION 2.2

a) What is the main objectives of Ethics ?

....

....

....

....

....

....

b) What does moral describe ?

....

....

....

....

....

....

2.2.1 The components of value in sports

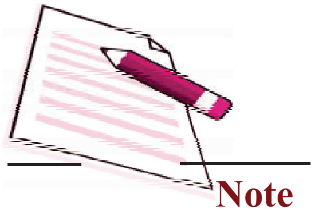
- Fair Play
- Respect for others
- Pursuit of excellence
- Coordination of mind and body
- Respect
- Health
- Performance in sports

Note

- Equal opportunities
- Joy of effort
- It promotes **ethical values**.
- It promotes the development of a positive **self-image** and **respect** for others.
- It **strengthens the community.**
- It promotes **socialization**, the development of new friendships and strengthening and reinforcing healthy lifestyles and stimulating community participation and social cohesion.
- It can promote **violence, doping, cheating and winning at any cost.**

"Physical Activities and Sports as major Stakeholders in building the ethics and values"

- Need to represent and express certain values to your student
  - Tolerance
  - Flexibility
  - Understanding
  - Discipline
  - Fun
  - Equality



- Respect

- Understanding sports as a part of education system
  - Be imbued with the playful spirit.
  - Be open, not discriminating against anyone for any reason.
  - Promote full respect for the rules, others, and the self.
  - Stimulate personal and group effort.
  - Not to be worried about results, this also involves personal and collective development.

2.3 OLYMPIC VALUES

There are three core values of olympics which are central focus at the Olympic Games and Youth Olympic Games namely excellence, respect and friendship. There are five educational themes also based on the Fundamental Principles of Olympism which incorporated with three basic approaches to learning: intellectual, social/emotional and physical. Five educational themes of Olympism are: learning joy of effort; learning fair play; learning respect for others; learning to pursue excellence and learning balance in life between body, will and mind.

2.3.1 Olympic Value means Friendship, Respect and Excellence

Note

Friendship

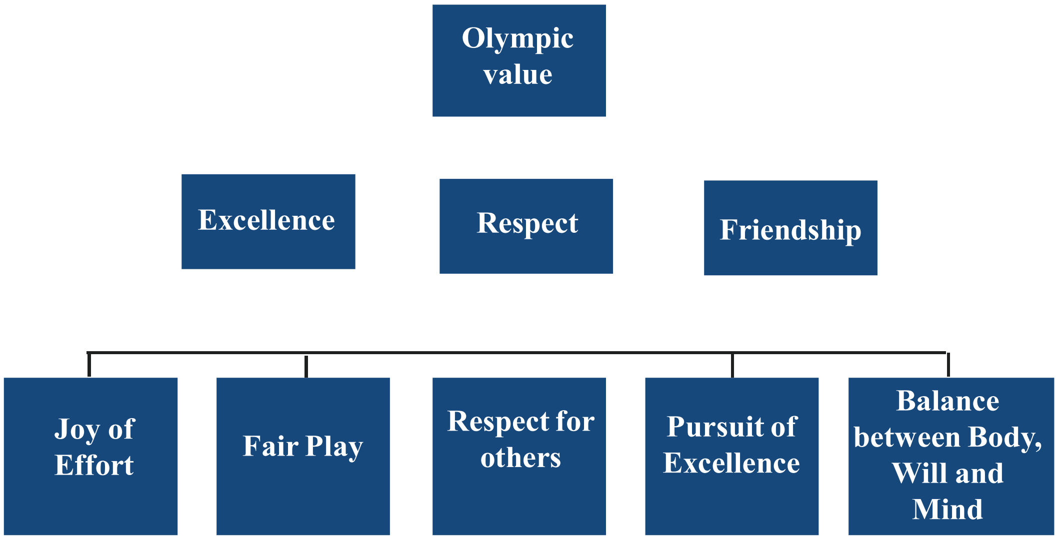
Friendship is at the heart of the Olympic Movement. It encourages us to see sport as an instrument for mutual understanding between individuals, and between people all over the world.

Respect

It includes respect for yourself and your body and for other people, for rules and regulations, for sport and for the environment.

Excellence

Excellence means doing the best on the playground or in our professional life. The important thing is not winning, but taking part, making progress and enjoying the healthy combination of body, will and mind.



2.3.2 Educational Themes of Olympism

Joy of Effort

An individual of younger age develops and performs physical, behavioural and intellectual skills by challenging their peer group in activities, movement, games and sports. In younger age an individual has lots of energy as they become older level of energy decreases. Sports or physical activities should be adopted on appropriate age, ability and skill level of an individual to achieve relative outcome. An example of 'Joy of Running' was published in newsletter of IOC. There was a boy Kipchoge Keino from Kenya living in a small village. His school was four mile away from his house and there was no public transport available. At age of 5 year Kipchoge Keino used to cover the distance from school to house and vice versa through walking or running. He enjoyed the running. He used to come home for a lunch and go back to school for remaining classes. Simultaneously he developed incredible aerobic system and soon he competed in national sports and became international player. He got job in Kenya police as fitness trainer and became example to cadets.

Fair Play

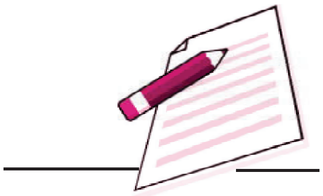
It is a concept of sports that an individual can apply in different ways of life. After playing sports an individual develops behaviour of fair play that reinforce in the community and in life. In sports, an individual plays with rules. Referees and officials enforce rules through penalties and punishments. There are many ways from which concept of fair play can be reflected like shaking hands at end of the game, appreciating opponent's extraordinary performance etc.

Respect for others

An individual living in a multicultural world should develop behaviour to accept and respect diversity. We should believe that all people and all cultures have worth. All people include women, children, people with disabilities, etc. and have human rights and community responsibilities. Violence is not the way to solve conflicts. In sports one team may consist of people belonging to different cultures focus on one goal that is to win for the team.

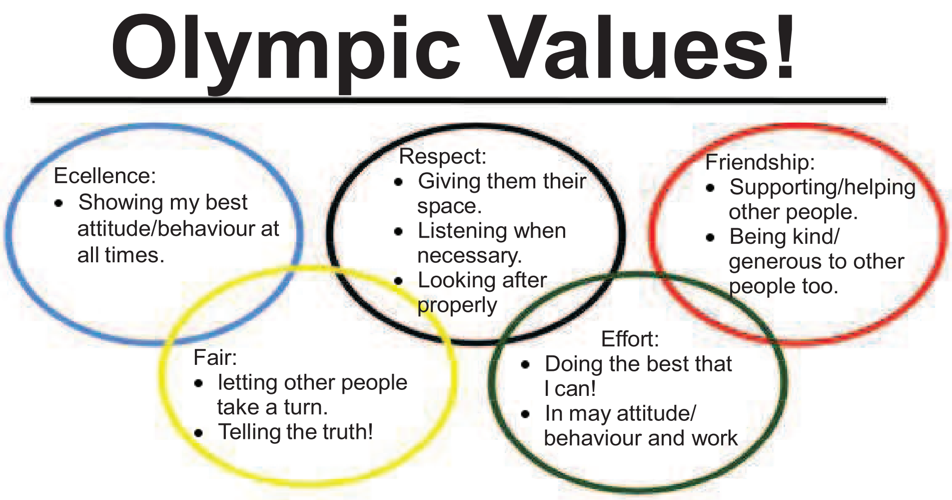
Pursuit of Excellence

Today's world is so competitive and demanding in which an individual tries to become the best. Sports provide opportunity to become best or to make healthy choices in social and physical surrounding. Sports sharpen the skills to become best for children of all ages, girls and boys, children with learning disabilities and children with hearing, vision and other physical disabilities. Sports give an environment free from discrimination, harassment and fear.



Balance Between Body, Will and Mind

This concept focuses on learning to happen in the whole body and not just in mind. Physical learning takes place in both body and mind but it cannot happen without will. Sport is a medium of balancing body, will and mind.

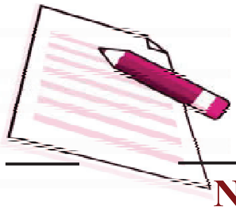


2.3.3 Four different ways of incorporating Olympic values in children/athletes

Olympians representing their countries draw their inspiration from set values that help them to prepare themselves to do their best when they compete, and to respond gracefully to whatever happens. You can help your kids to grow in their faith by teaching them following values :

Help them to develop strong work ethics

Olympians are known for their hard work – practicing their sport over and over again to develop their skills to the highest level possible.



Note

For example, Steven Holcomb, leader of the American bobsled team in Sochi, has credited the value of hard work in helping him to overcome serious obstacles (a degenerative eye disease and depression) to succeed in his sport. Holcomb has said that Olympians "have to make a lot of sacrifices" in order to focus on working hard. "You have to love your doing and put your heart and soul into it and that only takes you to the next level,"

As we talk with kids about the value of hard work, "All hard work bring a profit, but mere talk leads only to poverty." While it is also said, "I can do all things through him who gives me strength." – GOD

Encourage them to approach both success and failure gracefully.

Whether they win or lose, Olympians often respond with graceful attitude that inspires others Consider what matters most: not the results of a single event, but the character of the person competing in it.

For example : Indian hockey player Sandeep Singh exemplified a graceful response to success when he made the Olympic team for India despite his poor performance in the national championships. Officials decided to give a spot to Sandeep based on his reputation as a top drag flicker at most events, rather than let his mistakes at the championships keep him out of the Olympics. Sandeep responded to his successful bid for the team with humility and gratitude, bringing to mind. "Humble yourselves before the Lord, and He will lift you up. You Can Be in the Right Place at the Right Time".

Teach them excellence: The International Olympic Committee states that excellence is one of the core values around which the Olympic movement is constructed. Olympians strive to put their best effort into each practice and competition. They aim to do their personal best, no matter what circumstances or competitors they may be facing at the time.

"Whatever you do, do it with all your heart, as working for the Lord, not for human masters, since you know that you will receive an inheritance from the Lord as a reward. It is the Lord Christ you are serving." Encourage your kids to do their best in every situation to honor God, who cheers them to reach their full potential

Teach them friendship:

Another one International Olympic Committee's core value is friendship. Olympic athletes gather from around the world to compete, and in the process

they form friendships with each other. They watch each other's work, encourage each other, and sometimes make sacrifices to support each other. For example,

Twin sisters Tracy and Lanny Barnes, American biathlon athletes who share a strong friendship with each other, made news headlines when both were trying to make the Olympic team for Sochi. Lanny couldn't participate in all of the required selection races due to illness, but she had delivered strong performances throughout the season prior to qualifying races. After Tracy earned a spot on the Olympic team, she chose to give her spot to Lanny because Tracy thought Lanny deserved it more than she did, given her stronger performance over the past year.

Teach them respect.

The last of the International Olympic Committee's three official core values is respect. Olympians respect each other's value and also as team players; who make valuable contributions to others.

For example, choosing players for the U.S. men's hockey team, team general manager David Poile made some controversial decisions and left out some of the best American hockey players. But Poile said that rather than choosing an all-star team, he was trying to choose a team of players whose specialties complemented each other, so they could work together with respect and maximize their chances of winning a gold medal.

2.4 ADAPT SOCIAL AND PERSONAL ETHICS THROUGH YOG

It is through practicing yog one can find an ease in living ethically in this world. Through the practice of Yog we can achieve the highest potential of our self , which gives us the ability to transcend human condition of pleasure and pain. Yog is about purifying ourselves, which includes body, mind, spirit, speech, actions and our thoughts. Yog is nothing but cultivating ethics, because ethics is the foundation of a set of models and values that form the character of each person through action, into their way of being.

INTEXT QUESTION 2.3

Complete the following sentences to make them meaningful.

a) There are three core values of Olympism which are central focus at the Olympic Games and Youth Olympic Games namely ....

b) Referees and officials enforce rules through ....

c) All people include women, children, people with disabilities, etc. and have ....

d) Sport is a medium of balancing ....

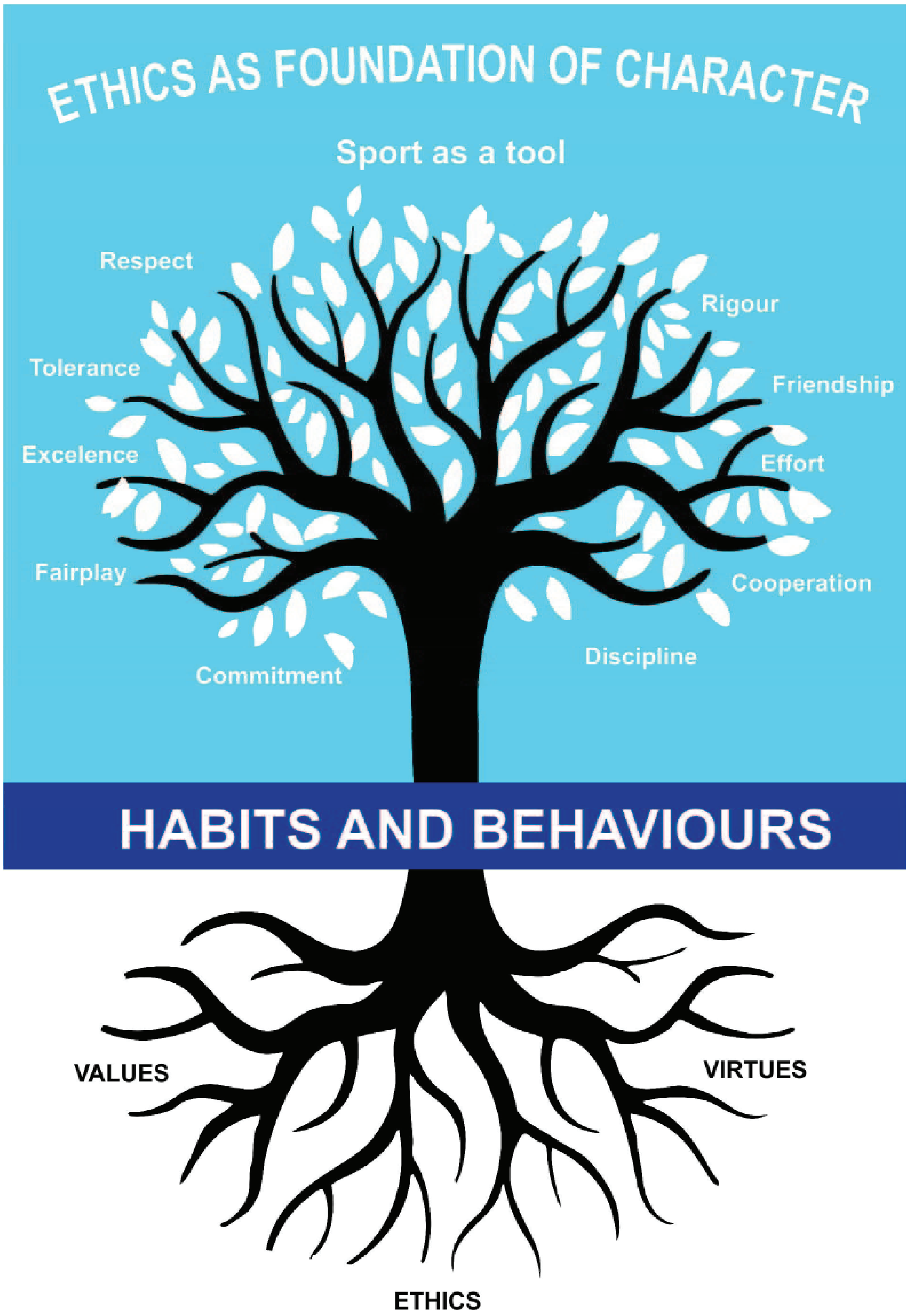
WHAT YOU HAVE LEARNT

- Ethics education promotes values and ethics for children
- Sports education can play an essential role in the development of ethical values.
- **"Sportsmanship"** is a behavior and attitude that shows respect for the rules of a game and for other players.
- **The main objective of ethics** is to place the human at the heart of our care and try to act for his greatest good.
- Ethics, as an entity of values, helps us to be aware that we cannot live in any manner whatsoever
- **Friendship :**is a relationship between two individual or countries in which they help and support each other
- Yog is about purifying ourselves, which includes body, mind, spirit, speech, actions and our thoughts

TERMINAL QUESTIONS

1. Why are physical educationist called the major stakeholders in building ethical values in children?
2. Explain the role of teachers in maintaining the code of sports ethics.
3. List the teacher's responsibilities towards imbibing the values of ethics.
4. Highlight the two factors what effects the sports training.

Note


ETHICS AS FOUNDATION OF CHARACTER
Sport as a tool
Respect
Rigour
Tolerance
Friendship
Excelence
Effort
Fairplay
Cooperation
Commitment
Discipline
HABITS AND BEHAVIOURS
VALUES
VIRTUES
ETHICS

Note

ANSWERS TO INTEXT QUESTIONS

2.1

1. a) Sportsmanship,

   b) ethics, respect, fairness and sense of fellowship

   c) shake hands

2.2

a) Ethics is to place the human at the heart of our care and try to act for his greatest good.

b) Moral describes the goodness and badness or right or wrong in action.

2.3

a) Excellence, respect and friendship

b) Penalties and punishments

c) human rights and community responsibilities.

d) body, will and mind

Note

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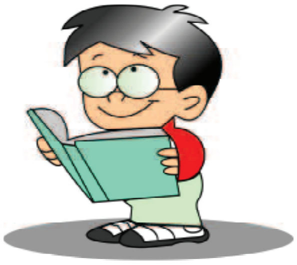
3

PHYSICAL FITNESS AND WELLNESS

Ashima was a very disciplined girl in her class and she was good in academics but in sports she had less interaction with her peer group, due to overweight and rarely participated in sports and cultural activities in school as well as at her home. Her parents were concerned and discussed the issue with the school's physical education teacher, who recommended her to enrol in school yog and sports program which improved her strength, flexibility and coordination. In next three months, there was a visible change in her overall health as she became more confident than before and her social interaction with peer group also improved.

OBJECTIVES



After studying this lesson you will be able to:

- explain the meaning of Physical fitness and its importance;
- explain the different types of physical fitness and their components;
- learn the concept and dimensions of wellness; and
- highlight the role of Yog in general well being of people.

3.1 PHYSICAL FITNESS

Physical fitness is the ability of wellbeing to perform day to day activities including occupation and for sportsperson to do training and practices of his/her game/sports without undue fatigue and to meet emerging situations which can be achieved through vigorous physical exercise, proper nutrition and sufficient rest. To achieve physical fitness an individual should do at least 3-5 days per week 20-30 minute daily vigorous physical exercises focusing on physical fitness components which are described in next topic. Besides that, an individual should take appropriate rest to relax the body and also focus on balanced diet and more water intake, having fibrous food etc. and avoiding junk food. For example, we can compare three persons; one is a teacher who teaches in school, one is a

Note

labourer who does hard work in paddy field and another is a sportsman who does extensive workout. If all are performing their duties without undue fatigue and meeting emerging situation then they all are physically fit despite having different fitness levels. Everyone has his own fitness level and it varies from day to day work, but the important thing is that work should be performed without undue fatigue.

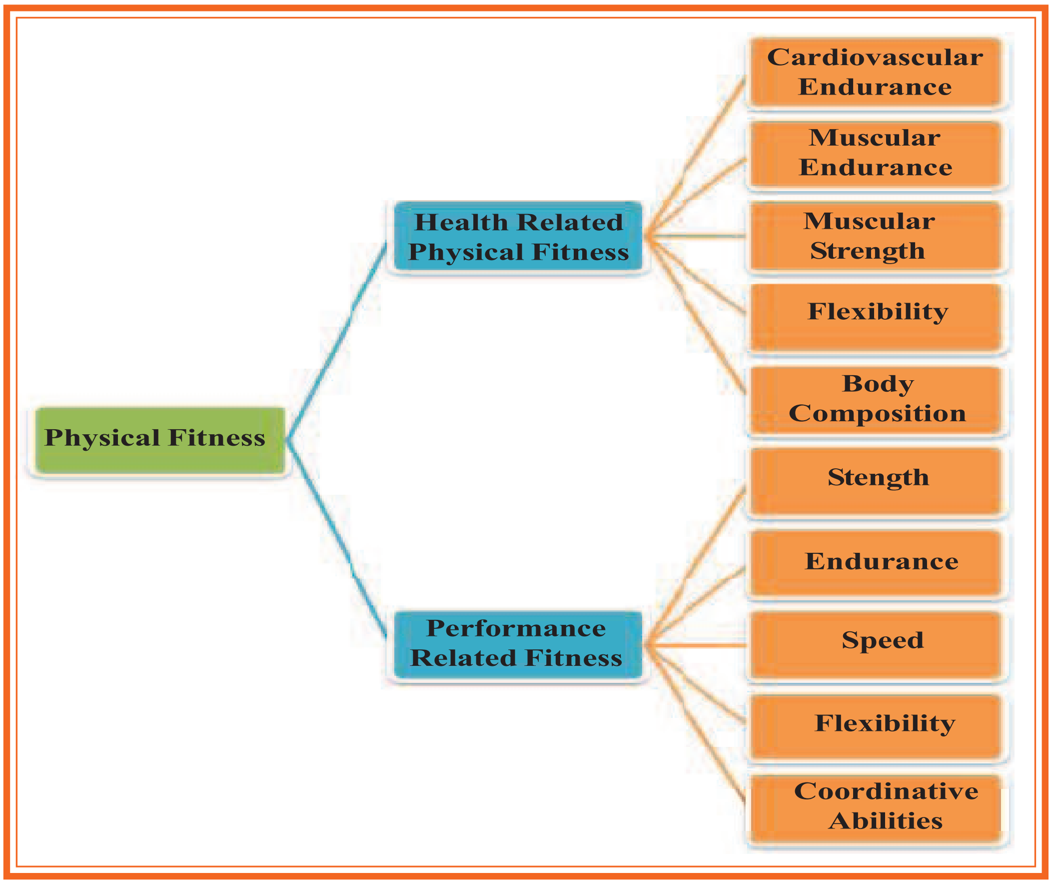


Figure 3.1: Typess of Physical Fitness

3.1.1 Importance of Physical Fitness

- Moderate, vigorous, regular exercise slows down the process of aging and also increases the energy to do work. Exercise keeps weight under control, improves posture and physical appearance. Strong bones, better immunity, low frequency of any disease occurrence are the indicators of fitness.
- Physically fit individual has alertness, concentration and positive thought about life. He/She motivates himself/herself to develop good personal habits regarding smoking, alcohol, tobacco etc.
- Regular exercise is a strength booster, relieves tension and controls emotion swings of an individual. A fit individual has improved self-image, self-confidence and self-esteem.

- Fitness helps to strenthen the relationships with family and friends. It also increases the opportunity for social contacts.
- Fitness reduces absenteeism in offices, increases productivity, reduces medical cost, increases networking possibilities, makes company energy efficient etc.

3.2 PHYSICAL FITNESS AND THEIR COMPONENTS

Physical fintess can be divided into two parts. Health related physical fitness and performance related fitness. A diagrammatic presentation of the classification is shown in figure 3.1 above.

3.2.1 Health Related Physical Fitness

This fitness is important for health and performance of daily functional activities. Components of health related physical fitness are cardiovascular endurance, muscular endurance, muscular strength, flexibility and body composition.

a) Cardiovascular endurance

Ability of the heart, vessels and lungs to deliver oxygen to the working muscles and removal of waste products during activity. Examples are long distance running, cycling, swimming, aerobic activity etc.

b) Muscular endurance

Ability of the muscle to exert continuous force against resistance or sustain muscular contraction. Activities with low intensity and high volume (long duration) are common like push-ups, sit-ups, chin- ups, rowing etc.

c) Muscular strength

Ability of the muscle to exert maximal force against resistance. Activities having high intensity and low volume (short duration) are suitable example like lifting heavy weight, 100 meter sprint, long jump, throwing etc.

d) Flexibility

Ability of the joint to move around in full range of motion. It is an essential component which prevents injury and ensures smooth and efficient movements. Women have more flexibility than men. Examples are toe touch; in yog there are lots of asanas which are helpful in flexibility like Chakrasana etc.

e) Body composition

It refers to the amount of fat free mass (muscle mass) and fat mass in body. The ratio of fat and fat free mass is an indicator of health. Excess amount of

fat is bad for our health that may lead to heart problems, diabetes, cancers etc. to assess the fat we apply BMI (body mass index), height and weight chart, skinfold methods etc.

3.2.2 Performance Related Fitness

Performance related fitness is the combination of motor and skill related fitness and is also important for better health. Components of motor fitness are strength, endurance, speed, flexibility and coordinative abilities. In sports movement, all components play their role in combination with other components in all sports. Depending on activity, some one component dominates others. In 100m sprint, speed is dominating but without strength it cannot be achieved. Similarly coordination and other components are required to perform well.

a) Strength

Ability of the muscle to act or overcome the resistance; resistance may be against a person or an object. It is an important component; role of the strength is to maintain good posture, good health, prevention of injuries etc. Weightlifting, throws, jumps are strength building sports.

b) Endurance

Ability of the muscle to do activity, for long duration continuously with desired speed without fatigue. Long distance race, swimming are the examples of endurance sports.

c) Speed

Ability to complete the task in minimum possible time. Quickness of movement of limbs in 100m sprint reflects the speed in 100 m sprint.

d) Flexibility

The ability to move joints through full range of motion is known as flexibility. The sit and reach test is a good measure of lower back hamstring muscles.

e) Coordinative Abilities

Ability to quickly and purposefully doing group of movements with better quality and effect. It is regulated and controlled by the central nervous system. Skills performed by the sportsperson of different games/sports are examples of coordinative abilities.

ACTIVITY 3.1

Measure Body Mass Index of your family members.

INTEXT QUESTIONS 3.1

Complete the following sentences to make them meaningful:

a) Fitness component, ‘speed’ comes under ....

b) Cardiovascular endurance is a component of ....

c) Body composition is related with .... and ....

d) Ability to quickly and purposefully doing group of movements with better quality and effect is known as ....

3.3 CONCEPT OF WELLNESS

WHO defines health as “a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity”. Dr. Halbert Dunn coined the wellness in 1950’s in view of pursuit of optimal wellbeing. Now a days Wellness is defined as “an integrated and dynamic level of functioning oriented towards maximizing potential, dependent on self-responsibility”. Wellness not only involves preventive health related behaviour but also a change in thinking and attitude. Wellness is for all means it can be achieved by all ages, genders, all socioeconomic groups, heredity, race etc. Wellness is a process of continuous and prolonged growth and achievement in the physical, social, emotional, spiritual, intellectual, occupational and environmental dimensions. Wellness is a way of life that an individual designs to achieve optimal health.

3.3.1 Dimensions of Wellness

Wellness has seven dimensions: physical, social, emotional, spiritual, intellectual, occupational and environmental which are interrelated. These are shown in Figure 3.2 below. For example, an individual does regular exercise in nearby fitness centre which covers her/his physical dimension, but she/he is not socially and intellectually sound to learn activity and interact with other members of the fitness centre. All activity helps him/her release emotional stress and also encourages co-workers to join the activity. Another important thing is that an individual should be having mastery over balancing all the dimensions.

Physical Dimension

Physical dimension focuses on functional health of the body. It involves regular exercise, eating a balanced diet, maintaining recommended weight, sufficient sleep, avoid smoking, alcohol, tobacco etc., medical self-care, regular testing, proper medications etc. Physically healthy individual should have the ability to carry out day to day activity and having enough energy for recreational and emergency work.

Note

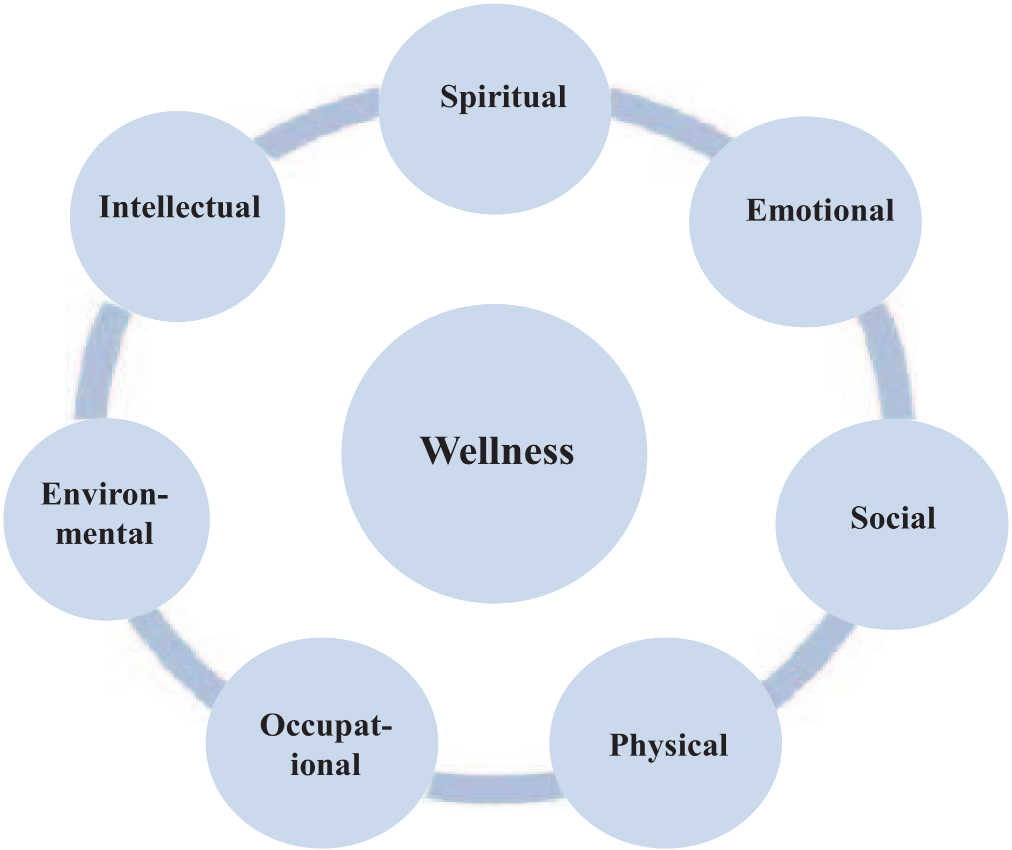


Figure 3.2: Dimensions of Wellness

Social Dimension

Individual should have the ability to get along with others, appreciate the uniqueness of others, and feel connected with others. Having good friends, bond with family members, volunteerism, community services, trusting relationship etc. are indicator of social wellness. Individual feeling of loneliness and isolation are linked with ill health and connected with people, group etc. are health boosters.

Emotional Dimension

Emotional wellness includes awareness, acceptance and management. Emotional awareness means recognizing one's own and other's; feelings, emotional acceptance includes understanding your personal limits and ability in terms of emotions and emotional management means control of an individual's feelings and having adequate coping mechanism. An emotionally well person should have the ability to express emotions, adjust to change, coping with stressful environment, accepting the limitations, achieving, emotional stability and enjoying life happily.

Spiritual Dimension

Spiritual dimension does not focus on God or religion as people assume. That involves personal search for meaning and direction of life. It focuses on beliefs, principles, values that provide guidance and strength during all life's experience.

Intellectual Dimension

It is an individual's ability to learn, think critically, analysing, evaluating, applying knowledge and interacting with the world. Intellectual person is open minded, having ability to accept others instead of being threatened by people who are different from others. They have faith in their own ideas and philosophies.

Environmental Dimension

Environmental dimension refers to preserving of natural resources, protection of plants and wildlife. An individual should form habits such as recycling, conservation of water electricity, petroleum products, organic agriculture, etc. To be healthy we need clean air, pure water, quality food, adequate shelter, personal Safety and health relationship. We should be responsible to educate and protect ourselves against environmental hazards and also protect environment for future generation.

Occupational Dimension

The occupational dimension involves with personal satisfaction of an individual from job or career. An individual spends lots of time on career or job in his/her life, so before choosing job or career an individual must understand its internal and external rewards. Occupationally well prepared people are able to maximize their skills and also have verity in it.

INTEXT QUESTIONS 3.2

Fill in the blanks with appropriate words.

a) Having good friends, bond with family members, volunteerism, community services, trusting relationship etc. are indicator of ....

b) An individual's ability to learn, think critically, analysing, evaluating, apply knowledge and interacting with world is known as .... wellness

c) Ability to express emotions, adjust to change, accept the limitations, achieve emotional stability and enjoy life happily is known as ....

d) Preservation of natural resources, protection of plants and wildlife are important for .... wellness

3.4 YOG AND WELL-BEING

Yog is a combination of physical, mental and spiritual practises. Yog practice inculcates the sense of peace and wellbeing. It also develops the feeling of connectivity to our surroundings. Yog is an ancient practice which was used for

Note

development of body, mind and spirit. Yog increases the flexibility and helps to boost immunity for healthy living. With the help of yogic practice one can maintain one's weight and massage one's whole organ systems which leads to the proper functioning of various systems of a body. It helps to improve the functioning of circulatory system, respiratory system, blood flow and also maintains the hormonal structures of the body. It increases concentration, focus and helps in bringing emotional stability and clarity of mind within oneself.

Yogic exercises recharge the body with cosmic energy and also facilitate various objectives like attainment of a perfect equilibrium and the harmony within the body. It removes the negative block from our body and promotes self learning which enhances the personal power and increases self-awareness. Among children yog helps them to focus and improve their concentration skill. Parasympathetic nervous system is activated and it helps to reduce stress and tension in the physical body due to yogic exercises.

Yog contributes in better sleep, greater happiness, weight loss and also boost compassion and gratitude. Studies showed that yog helps in slowing ageing on cultural level, may be because it helps to decrease the stress and tension.

It is believed that yog results in many physical benefits by improving flexibility, strength and posture.

DO YOU KNOW ?

"When you practise yog, your perspective on your body, your thoughts, and your whole sense of self can change"

The most popular from of yog which is also in western culture is Hath yog which includes posture, breathing and meditation.

Postures (Asana)

The way we carry influences, the way we feel, with the help of yog we can view our minds and outer manifest and it can be related by body postures as asanas. One's perspective on body, thoughts and whole sense of Self can be changed when we adopt different postures.

Breathing

Yog breathing exercise relaxes the body, oxygenates the blood which also helps in decreasing anxiety and stress and promotes a very focused and clear thinking. It helps in free mind from mental distraction, worries and fatigue. Arousal in the sympathetic nervous system, which can lead to anxiety, panic, and fear can be decreased due to breathing exercise which helps to calm down and focus the mind.

Note

Meditation

Meditation is a type of inward concentration that allows you to focus on your senses, step back from your thoughts and feelings, and perceive each moment as a unique event. It helps us to develop greater calmness, clarity, and insight in facing and embracing life experiences.

ACTIVITY 3.2

Prepare a chart having the name of asana for mental peace and relaxations.

INTEXT QUESTIONS 3.3

1) Which one of the following is not a psychological benefit of yog practice?

   a. Stress reduction

   b. Increased mental clarity

   c. Enhances personal power

   d. Improved reaction time

2) Which one of the following is not a type of yog?

   a) Hatha

   b) Ashtanga

   c) Strength

   d) Kundalini

Complete the sentence with apprpriate word.

3) Hath yog involves three basis of yog including postures, breathing techniques, and ....

WHAT YOU HAVE LEARNT

- Physical fitness is ability of wellbeing to perform day to day activities including occupation and for sportsperson to do training and practices of his/her game/sports without undue fatigue and to meet emerging situations which can be achieved through vigorous physical exercise, proper nutrition and sufficient rest.

Note

- Importance of Physical Fitness
- Performance related fitness: components of motor fitness strength, endurance, speed, flexibility and coordinative abilities.
- Dimensions of Wellness: physical, social, emotional, spiritual, intellectual, spiritual and environmental.
- Health benefits of yog for wellbeing.

TERMINAL QUESTIONS

1) What is meant by Physical Fitness? Highlight the importance of physical fitness.
2) Explain the different types of physical fitness with their components.
3) Define Wellness. Elaborate dimensions of wellness.
4) Explain the importance of yog for wellbeing.

ANSWER OF INTEXT QUESTIONS

3.1

a) performance related fitness,

b) health related fitness,

c) lean body mass and fat,

d) coordinative abilities.

3.2

a) social wellness,

b) Intellectual,

c) emotional wellness,

d) Environment

3.3

1. c
2. c
3. meditation

Note

4

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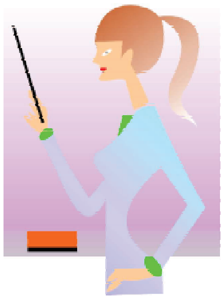
CAREER ASPECTS OF PHYSICAL EDUCATION

Deepti is 16 years old village girl from class X; she is very shy and introvert. Friends used to comment on her intelligence and personality. She has no aim to live. Life becomes dull and harsh for her.

One day, Sports teacher selected her for races.. Now she got the aim of her life.. She won the bronze medal in 100 m race. That day she got the real transformation in her life.

Her self-esteem and confidence level improved. She is no more remained an introvert girl. She started practising for state level competition. She completed her 10+2, but again was confused for next step in life. She wants to continue her sport, but her family forced her to get married as soon as possible.

One day her sports teacher found her in cultivating work in village. She guided her that there were a lot of career opportunities in the field of Physical education and sports.



Note

OBJECTIVES

After studying this lesson, you will be able to:

- learn about the opportunities in Physical Education;
- learn about the different courses and universities available for Physical Education and
- explain the qualities of a Physical Education Teacher.

4.1 OPPORTUNITIES IN PHYSICAL EDUCATION

Physical education being one of the dynamic fields provides numerous opportunities for diverse career options. There are various careers to choose in the field of physical education like being a teacher, coach, sports manager etc.

"Education can be described as a planned and programmed process which is applied in order to attain the desired changes in a peer's behaviour. In the general education teaching is defined as a thoughtful, planned and systematic organization of learning. Learning is a process of acquisition of specific knowledge, skills and habits" (Demirel, 1993).

"Physical education is defined as a process through which an individual obtains optimal physical, mental, and social skills and fitness through physical activity" (Lumpkin, 1998).

4.1.1 A Career in Physical Education

A career in physical education can lead you to a wide range of career options; from being a part of the chosen sport, health clubs, sports goods manufacturer, marketing, commentator, sports journalist, trainer, and many other similar options. Although in the beginning you will find jobs more likely as a trainer or instructor for a game or sporting event but with your experience over the years, you can put this experience to use in sports journalism, marketing, commentator or other related fields.

Do you know

DO YOU KNOW?

Physical Education is a professional course which is based on certain parameters of tests such as Written test, Physical fitness test and Sports proficiency test

4.1.2 Teaching in Physical Education and Sports

Physical education offeres Bachelor's course in Physical Education such as B.P.E.S, B.Sc in Physical Education, Health Education and Sports and B.P.E. A

Note

teacher is eligible as a Trained Graduate Teacher in Government and Private Schools till 10th standard after completing B.P.Ed.

M.P.Ed (Master in Physical Education) is a 2 year degree course and students are eligible to work as a Post graduate teacher who can teach till 11th and 12th standard. For higher education, if students go for PhD degree then she/he is eligible for Lecturer/ Assistant Professor in College or Universities but he/she has to clear National Eligibility Test compulsorily. CTET (Central Teacher Eligibility Test) qualifying examination is not conducted in Physical Education. Other career options are shown in the figure given below:

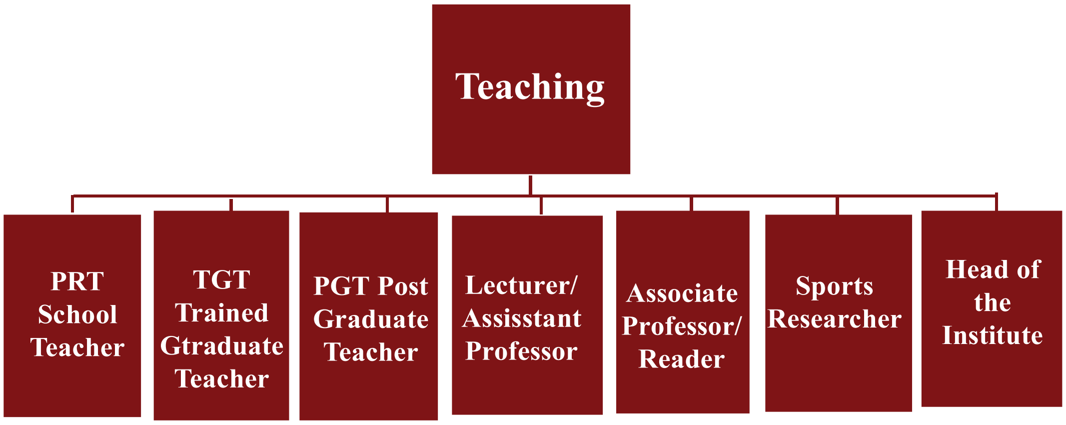


Figure 4.1: Teacher Career Options

4.1.3 Coaching in Physical Education and Sports

Similarly, like teaching, students who have an interest in coaching field can also pursue their career in professional coaching. A specialised coaching programme conducted by Netaji Subhash National Institute of Sports (NSNIS) offers specialised coaching programmes for sportspersons. After doing the coaching programme a student is eligible to work in Private and Government institutions/ Colleges/ Universities/ Academies and other non-profit organisations (NGOs). Apart from teaching other career options are also given below:

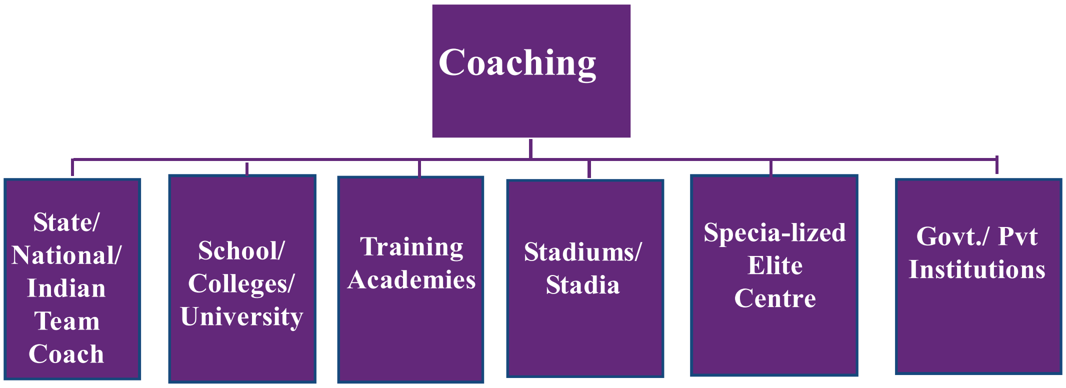


Figure 4.2: Career Options

Note

4.1.4 Administrative Job Opportunities

A physical education student is also eligible for prestigious administrative jobs like Sports officer/Assistant director/Director in Colleges/Institutions and Universities. They are also eligible to work in International and National championship as an official like Commonwealth, Asian Games, World cup and other international tournaments. Some of the administrative career options are given below:

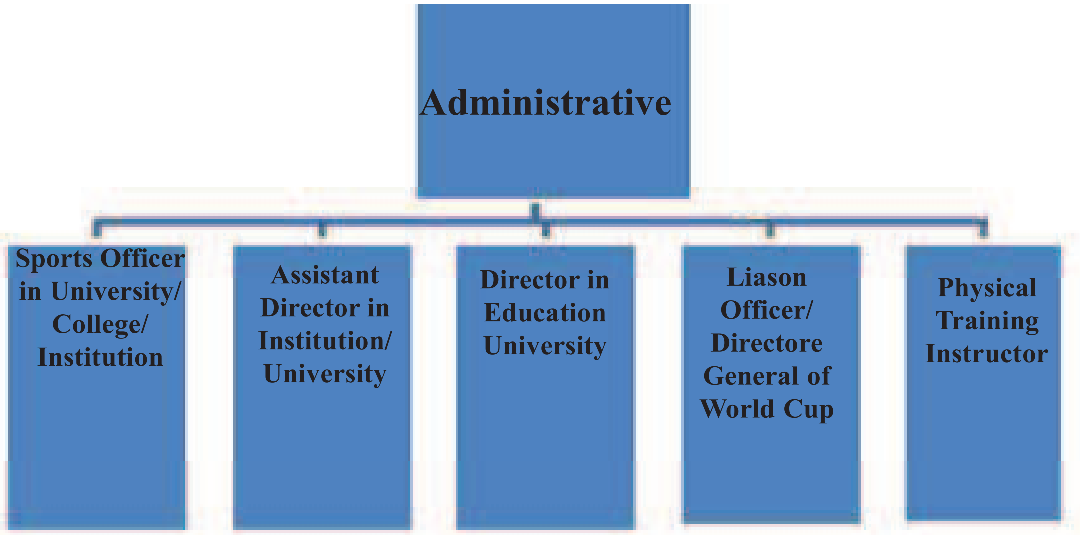


Figure 4.3: Administrative Career Options

4.1.5. Trainer

Candidates who successfully complete the diploma or bachelor's degree in physical education are also eligible to work as fitness trainer, Gym trainer, Yog and Health trainer in private and Government institution in a Gymnasium on part time or full time basis. They are also eligible to work with professional academics and clubs as a fitness or Yog trainer. Other career options are given below:

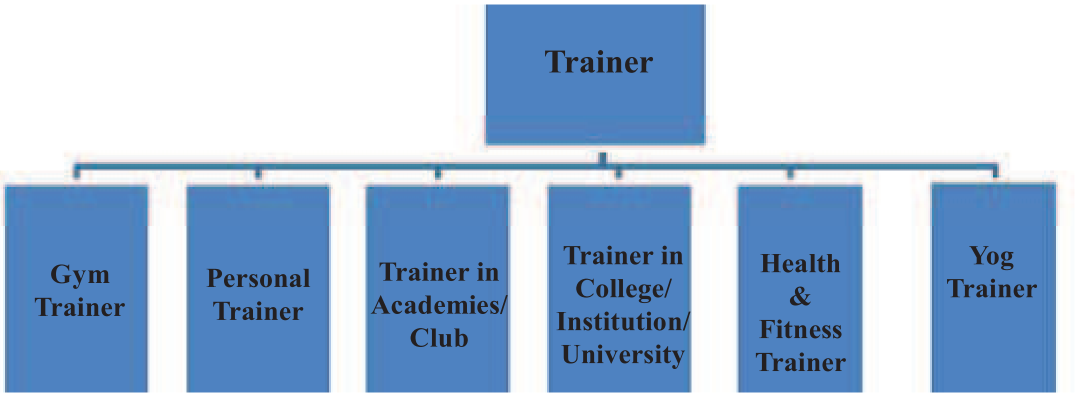


Figure 4.4: Other Career Options

Note

4.1.6. As a Player

Sportspersons, who have participated in National and International Sports tournaments, are eligible to apply for various Government Jobs in C.I.S.F, Railway, Delhi Police, C.R.P.F. etc. Now a days, amateur sports transform into commercialised games, many sports offer Professional leagues in particular games i.e. IPL, ISL, BPL, WKL etc. Sportspersons also earn good money by professionally participating in the above leagues. Some new emerging career optons are also given below:

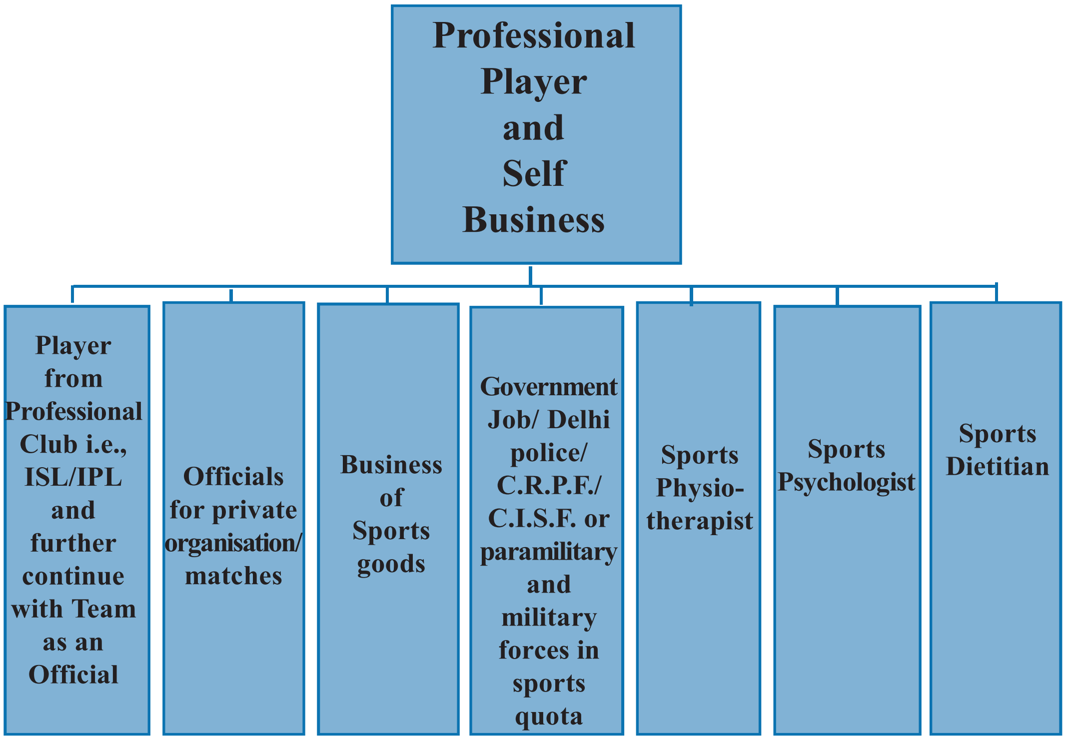


Figure 4.3: Emerging New Career Options

DO YOU KNOW?

As a professional cricket player, one can earn more than 6-10 crore in one IPL season.

ACTIVITY 4.1

Prepare a collage with the pictures depicting various careers adopted by physical education professionals.

4.1.7 Other Opportunities

A student of Physical Education and Sports Sciences, can avail other career opportunities such as Sports journalist, Sports broadcaster, Sports marketing manager, Sports goods businessmen, Sports Psychologist with team, Sports Physiotherapist, Sports Sociologist, Sports Biomechanics analyser, Sports dietician, Sports medicine expert and Sports researcher after completing the bachelor's and masters degree in physical education.

INTEXT QUESTION 4.1

1) i) Write the full form of following abbrevatios :-
   - PRT……………………
   - TGT……………………
   - PGT……………………
   - PET.……………………
   - NIS……………………..

2) Mark the following statements as true or false:
   a) Bachelor in Physical Education is eligibility for PRT True/False
   b) CTET exam is not required in Physical Education True/False
   c) Physical Education is a professional course True/False
   d) National and International players are eligible for government jobs True/False
   e) PGT teachers can teach till 12th standard in school True/False
   f) Physical Education degree also helps you to work in Gym/Fitness industry True/False

4.2 COURSES AND INSTITUTIONS OF PHYSICAL EDUCATION

An interested student can do either **Diploma, Certificate or Degree** course in physical education. There are many government and private institutions and collages that offer these courses. It is a demanding field and only those students should opt for it who have a **deep interest** in this field. Some of the leading institutions to pursue physical education as career in India are given below:

A. Indira Gandhi Institute of Physical Education and Sports Sciences, Department of Physical Education, University of Delhi, B-Block Vikapuri, New Delhi-110018,

Note

S.No.	Name of the Course	Duration
1.	B.Sc. in Physical Education, Health Education and Sports Sciences	3 year Degree course
2.	B.P.Ed (four semester) course, Bachelor of Physical Education	2 year Degree course
3.	M.P.Ed. (four semester) course, Masters of Physical Education	2 year Degree course
4.	Ph.D. Doctor of Philosophy (Physical Education)	3 year Degree

For more information visit: **www.dudpess.du.ac.in & www.igipess.du.ac.in**

B) Lakshmibai National Institute of Physical Education (LNIPE)

(Govt. of India, Ministry of Youth Affairs and Sports) Mela Road, Gwalior, M.P.-474002, India

S.No.	Name of the Course	Duration
1.	Bachelor of Physical Education (B.P.Ed.)	8 Semesters
2.	Master of Physical Education (Sports Biomechanics)	4 Semesters
3.	Master of Physical Education (Exercise Physiology)	
4.	Master of Physical Education (Health Education)	
5.	Master of Physical Education (Sports Psychology)	
6.	Master of Physical Education (Physical Education Pedagogy)	
7.	Master of Physical Education (Sports Management)	
8.	Master of Arts in Yog	
9.	Post Graduate Diploma in Fitness Management (PGDFM)	2 Semesters
10.	Post Graduate Diploma in Sports Management (PGDSM)	
11.	Post Graduate Diploma in Sports Journalism (PGDSJ)	

Note

12.	Post Graduate Diploma in Sports Coaching (PGDSC) (Athletics, Basketball, Badminton, Cricket, Football, Handball, Hockey, Judo, Tennis, and Volleyball)	2 Semesters
13.	Diploma in Sports Coaching (DSC)(for in-service Defence personnel only)(Athletics, Basketball, Football, and Volleyball)	
14.	Post Graduate Diploma in Yog Education (PGDYEd)	2 Semesters
15.	Ph.D	3 Years
16.	B.A. (Program) Sports & Performance	6 Semesters
17.	M.Sc. (Sports Bio-mechanics) M.Sc. (Exercise Physiology) M.A. (Sport and Exercise Psychology)	4 Semesters

For detailed information on courses, fee structure and other relevant information visit, www.inipe.edu.in

C) Tamil Nadu Physical Education and Sports University

(Estd. by the Govt. of Tamil Nadu under Act No. 9 of 2005 and approved by UGC/AIECT) 8th Floor, EVK Sampath Maaligai, College Road, Chennai-6 Tamil Nadu

S.No.	Name of the Course	Duration
	Department Of Physical Education	
1.	Ph.D., in Sports Coaching	With M.Phil (Regular 2-years / Part time 3-years) Without M.Phil (Regular 3-year / Part time 4-years)
2.	M.Phil., in Sports Coaching	1 Year
3.	MSc., in Sports Coaching	1 Years
4.	P.G.Diploma in Sports Coaching	18 Months
5.	Ph.D., in Sports Technology	With M.Phil (Regular-2yrs / Part time-3yrs) Without M.Phil)Regular-3yrs / Part time-4yrs)
6.	M.Tech., in Sports Technology	2 Years

	DEPARTMENT OF YOG	
7.	Ph.D., in Yog	With M.Phil (Regular 2-years / Part time 3-years) Without M.Phil (Regular 3-year / Part time 4-years)
8.	M.Phil., in Yog	1 Year
9.	M.Sc., Yog	2 Years
DEPARTMENT OF EXERCISE PHYSIOLOGY AND BIOMECHANICS		
10.	Ph.D., in Exercise Physiology and Nutrition	With M.Phil (Regular 2-years / Part time 3-years) Without M.Phil (Regular 3-year / Part time 4-years)
11.	M.Phil., in Exercise Physiology and Nutrition	1 Year
12.	M.Sc., Exercise Physiology and Nutrition	2 Years
13.	B.Sc., Exercise Physiology	3 Years
14.	M.Sc., Sports Biomechanics and Kinesiology	2 Years
DEPARTMENT OF SPORTS MANAGEMENT AND SPORTS PSYCHOLOGY & SOCIOLOGY		
15.	Ph.D., in Sports Psychology and Sociology	With M.Phil (Regular-2yrs/ Part time-3yrs) Without M.Phil (Regular-3yrs / Part time-4yrs)
16.	M.Phil., in Sports Psychology and Sociology	1 Year
17.	M.Sc., sports Psychology and Sociology	2 Years
18.	Ph.D., in Sports Management	With M.Phil (Regular-2yrs/ Part time-3yrs) Without M.Phil (Regular-3yrs / Part time-4yrs)
19.	M.Phil., in Sports Management	1 Year
20.	M.B.A., in Sports Management	2Years

Note

DEPARTMENT OF ADVANCED SPORTS TRAINING AND TECHNOLOGY		
21. 3-	Ph.D., in Sports Coaching	With M.Phil (Regular 2-years / Part time 3-years) Without M.Phil (Regular year / Part time 4-years)
22.	M.Phil., in Sports Coaching	1 Year
23.	MSc., in Sports Coaching	1 Years
24.	P.G.Diploma in Sports Coaching	18 Months
25.	Ph.D., in Sports Technology	With M.Phil (Regular-2yrs / Part time-3yrs) Without M.Phil (Regular-3yrs / Part time-4yrs)
26.	M.Tech., in Sports Technology	2 Years

For more information visit: www.tnpesu.org

D) Department of Physical Education, Punjab University, Chandigarh

S. No.	Name of the Course	Duration
1.	Bachelor in Physical Education	2 year
2.	Master in Physical Education	2 year
3.	Ph.D	3 year

For more information visit: http://physicaleducation.puchd.ac.in

E) Department of Physical Education (Teacher Education and Learning), Post Graduate Govt. College Sector-11 affiliated to Panjab University, Chandigarh

S.No.	Name of the Course	Duration
1.	Bachelor of Arts - Physical Education	3 Year
2.	Bachelor of Physical Education (4 Years)	4 year
3.	Master of Physical Education (2 Years)	2 year
4.	Master of Philosophy in Physical Education (1 Year)	18 month
5.	Doctorate of Philosophy in Physical Education	3 year

Note

For more information visit: **http://www.gc11.ac.in/physical-education/**

F) Aligarh Muslim University (AMU)

S. No.	Name of the Course	Duration
1.	Bachelor of Physical Education (B.P.Ed.)	2 Year
2.	Master of Physical Education (M.P.Ed.)	2 Year
3.	Ph.D. (Physical Education)	3 Year

For more information visit: **https://www.amu.ac.in/departmentpage.jsp?did=82**

G) Swarnim Gujrat Sport University

S.No.	Name of the Course	Duration
1.	Bachelor of Physical Education (B.P.Ed.)	2 Year
2.	Bachelor of Physical Education and Sports (B.P.E.S.)	3 year
3.	Master of Physical Education and Sports (M.P.E.S.)	2 Year
4.	Master of Journalism And Mass Communication (Specialization- SPORTS JOURNALISM)	2 Year
5.	PG Diploma in Disability Sports	1 Year
6.	PG Diploma in Sports Journalism	1 Year
7.	PG Diploma in Sports Nutrition	1 Year
8.	PG Diploma in Adventure Sports Administration	1 Year
9.	PG Diploma in Sports Coaching	1 Year
10.	PG Diploma in Sports Management	1 Year
11.	Master of Philosophy	18 month
12.	Doctor of Philosophy	3 year

For more information visit: **https://sgsu.gujarat.gov.in**

H) Department of Physical Education Banaras Hindu University

S.No.	Name of the Course	Duration
1.	B.P.Ed.	3 Year
2.	M.P.Ed.	2 year
3.	Ph.D.	2 year
4.	P.G. Diploma in Sports Journalism	3 year

Note

For more information visit: **http://www.bhu.ac.in/arts/physical-edu/**

4.2.1 Other Institutions for Physical Education Courses

- Lakshmibai National College of Physical Education, Kariavattam P.O., Thiruvanan thapuram - 695581 Kerala

  For more information visit: http://www.lncpe.gov.in/

- YMCA college of Physical Education, Old No 333 New No 497, Anna Salai, Nandanam, Chennai - 600035

  For more information visit: http://www.ymcacollege.ac.in/

- The Lakshmibai National Institute of Physical Education, North East Regional Centre, Guwahati

  For more information visit: www.lnipe.edu.in

- Prof. Gursewak Singh Govt. College of Physical Education, Patiala (Punjab),

  For more information visit: http://www.pgsgcpe.com/

- Saheed Kanshi Ram College of Physical Education, Bhagoo Majra, Kharar Mohali, Punjab affiliated with Punjabi University Patiala both offer M.P.Ed.(Two year course), B.P.Ed (One year course), B.P.E. (Four year course), and C.P.Ed.(Two year course).

- Department of Physical Education, Punjabi University, Patiala offers M.P.Ed (Two year course) only.

  For more information visit: http://www.punjabiuniversity.ac.in/Pages/Department.aspx? dsenc=61

- Department of Physical Education Guru Nanak Dev University, Amritsar offers B.P.Ed (one year) and M.P.Ed (Two year course).

  For more information visit: http://online.gndu.ac.in/department-of-physical-education.aspx

- SAI NS NIS Patiala offers courses not in Physical Education but exclusively in Sports coaching such as Diploma in coaching in various sports, Masters of Sports in selected sports and M.S. in sports medicine.

  For more information visit: http://nsnis.org/academic-courses/diploma-course-in-sports-coaching/

- Some other private institutions and Universities also provide courses in physical education.

Note

DO YOU KNOW?

The merit of admission process in Physical Education is also based on Sports certificates which you have participated in last three years.

Some university also give you a subject in M.P.Ed for dissertation, the thesis work, which would be helpful to learn and research in sports sciences

ACTIVITY 4.2

Prepare a collage by collecting pictures of a physical education teachers doing different jobs and responsibilities.

INTEXT QUESTIONS 4.2

1) What is the minimum qualification required to get admission in B.P.Ed.?

....

....

....

2) Name the university that offers the course of M.A. in Mass Communication and Sports Journalism.

....

....

....

3) Make a list of institutions/universities that offer M.P.Ed in Physical Education.

....

....

....

Note

4.3 QUALITY OF PHYSICAL EDUCATION TEACHER

A physical education teacher is a role model for students, who is expected to be disciplined and physically fit. Physical education teacher teaches students in the field as well as in class room. Sometimes he does coaching to sportspersons and sometime he acts as teacher who tells about the different aspect of physical education. He has to perform a dual role in institution. These are the qualities of a physical education teacher which help him/her to maintain the standard of a good teacher.

Physical Fitness

Physical education teacher must have good physical fitness. Since he is a role model for students, her/his personality should motivate students to stay healthy by doing physical activities. This shows the positive attitude towards physical fitness.

Model Character

A physical education teacher must have qualities like teamwork, leadership, sportsmanship. Involving with children is a challenging task. She/he must take unbiased and fair decisions while evaluating students. She/he must present, actor behave like a role model for students.

Interpersonal Skills

Since physical education teacher interacts with students, parents and other teachers of the institution, so she/he must have good interactive skills. Oral communication does not work always sometimes body language, emotional intelligence etc play a dominant role.

Communications skills

Good Communication helps in explaining activities as well as imparting theoretical knowledge to students. Communication should be done as per level of students. Content knowledge boost the level of communication.

Patience and Adaptability

Physical Education teacher must have patience and adaptability which will help her/him to take a good decision. Students have different levels to adopt knowledge; a teacher should have patience to wait for result and be able to modify the lesson as per requirement.

Organizational Skills

Physical education teacher has to organise different types of sports tournaments, so she/he must have good organisation skills. She/he should have the ability to record and report the progress of students.

Enthusiastic

A physical education teacher's task is to make activity interesting, competitive and cooperative. This will help students to motivate and do physical activities as teamwork and friendship.

Physical Qualities

Physical education teacher must have physical and cognitive skills and knowledge of various sports, and also have the ability to demonstrate the activity. She/he must be physically fit so that she/he can perform the activities efficiently.

Creativity

Physical education teacher must have enough creative skills that motivate and inspire students to get the knowledge from different sources by them selves. She/he should be able to design the activity which helps students to learn from different ways.

WHAT YOU HAVE LEARNT

- There are various courses at graduate and post-graduate level in physical education.
- A student can persue his/her career in physical education after offering degree courses in physical education to act as a teacher or coach.
- New career have emerged and opening new areas for the students to take up this Profession.
- Many institutions are offering courses in physical education.
- Student will understand who can persue physical education as a career.
- What qualities are required to persue physical education.

TERMINAL QUESTIONS

1) Describe the Career aspects in Physical Education.
2) Explain various avenues in Physical education especially in India
3) Explain various courses of physical education that existing in India along with briefs of top ranking institutions.
4) Explain the qualities of a Physical Education Teacher.
5) Explain the key points to be included in the resume.

ANSWERS TO INTEXT QUESTIONS

4.1

1) **Answer**
   - PRT….Primary Teacher
   - TGT….Trained Graduate Teacher
   - PGT…Post Graduate Teacher
   - PET…Physical Education Teacher
   - NIS…National Institute of Sports

2) **Answer**
   a) True
   b) True
   c) True
   d) True
   e) True
   f) True

4.2

1) 2 year degree course
2) Laxmibai University of Physical Education, Gwalior
3) Answer:-
   I) Indira Gandhi Institute of Physical Education and Sports Sciences, University of Delhi, B-Block vikaspuri, New Delhi-110018,
   II) Lakshmibai National University of Physical Education (LNUPE) Govt. of India, Ministry of Youth Affairs and Sports) Mela Road, Gwalior, M.P. Pin code 474002
   III) Tamil Nadu Physical Education and Sports University, 8th Floor, EVK Sampath Maaligai, College road, Chennai-6 Tamil Nadu
   IV) Degree College of Physical Education H.V.P. Mandal's affiliated to Amravati University
   V) Saheed Kanshi Ram College of Physical Education, Bhagoo Majra, Kharar Mohali, Punjab affiliated with Punjabi University Patiala
   VI) Department of Physical Education Punjab University, Patiala .
   VII) Department of Physical Education Guru Nanak Dev University, Amritsar.

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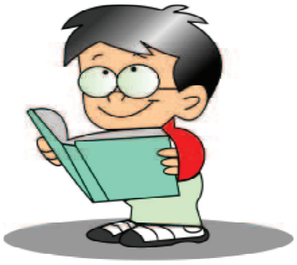
5

PHYSICAL AND PHYSIOLOGICAL ASPECTS OF PHYSICAL EDUCATION

Anand is an athlete and is the medal winner in the 100 mt race in School annual sports meet. He is aspiring to compete in inter school and district athletic competition, for which he has to improve his performance through training from athlete experts. He consulted his school Physical Education teacher, who accompanied him to the district stadium of his locality and met the athletic coach of the stadium. The stadium coach listened to Anand and his school Physical Education Teacher and started suggesting Anand. The suggestions focused around essentials required to improve performance, benefits of exercise, type of exercise and training required to improve physiological and physical aspects of Anand. Anand could not understand the suggestions and was expecting his Physical Education Teacher to make him understand as to how physical activity can affect cardiovascular system, respiratory system and muscular system through exercises and training. On returning from the district stadium, school Physical Education Teacher started to explain the concepts discussed by the athletic coach to Anand, which are included in this chapter.

OBJECTIVES



After studying this lesson, you will be able to:

- explain the concept, types and components of physical activity;
- explain the concept and effects of exercise on the muscular system;
- learn the effects of exercise on the respiratory system;
- count the effects of exercise on the circulatory system and
- explain the concept of Yog Physiology.

5.1 CONCEPT OF PHYSICAL ACTIVITY

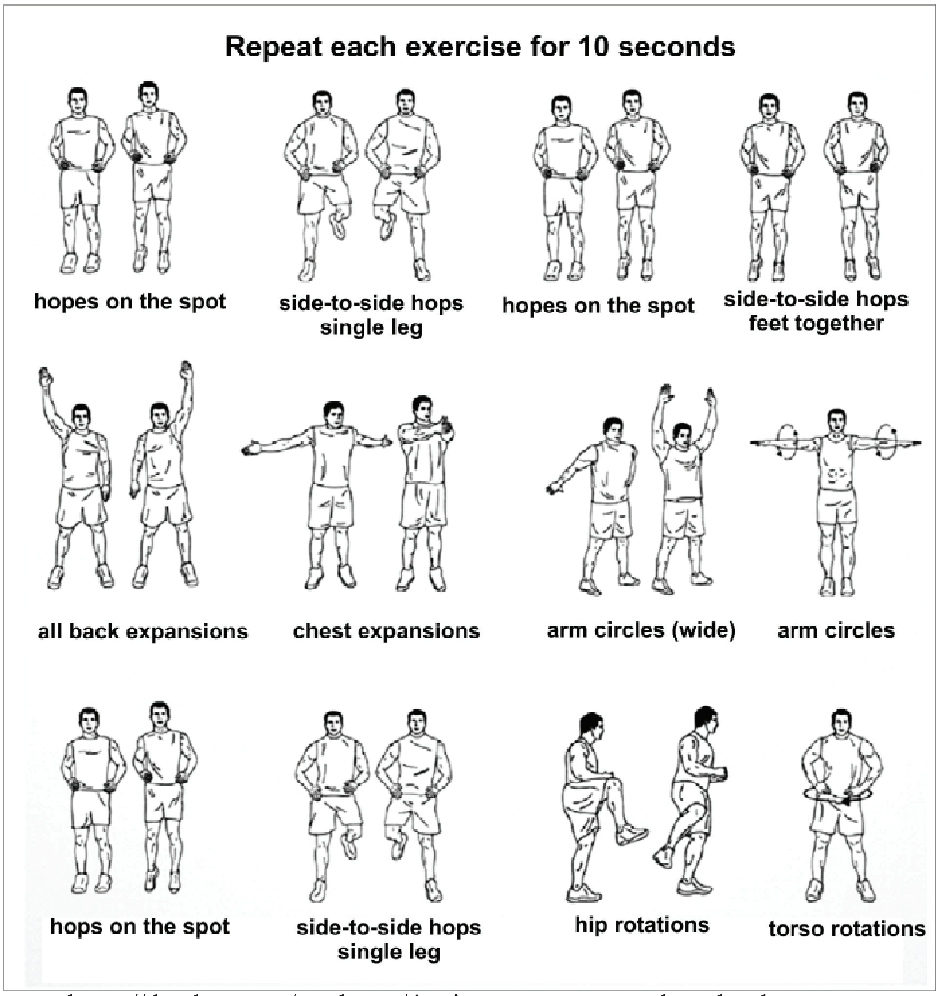
Exercise can be defined as “the collective efforts done by the body to perform a specific task” or any body movement done by the muscles, regulated by brain that results in energy expenditure. Here we are talking about physical activities

Note

that include your anatomical posture, physiological systems, psychological efforts, social environment etc. Without physical, mental, emotional and social efforts physical activity can not be performed. There are ranges of physical activities which can be divided into three sections: aerobic activities, anaerobic activities and flexibility exercises. We have to understand the different types of activities, before we could understand their effects on different systems of our body. You are advised to do warmup, before you start any workout and after completion of workout you are advised to do cooling down.

5.1.1 Warm Up

Warm up are those exercises which are performed before any workout with a purpose of physiological and psychological preparation. We can divide warming up into two parts: general warm up and specific warm up. In general warm up, an individual does general physical movements like sport jogging, stretching, calisthenics etc. In specific warm up, an individual does physical movement specific to those group of muscles which are in major form involved in specific skill.



Source- https://darebee.com/workouts/4-minute-warmup-workout.html

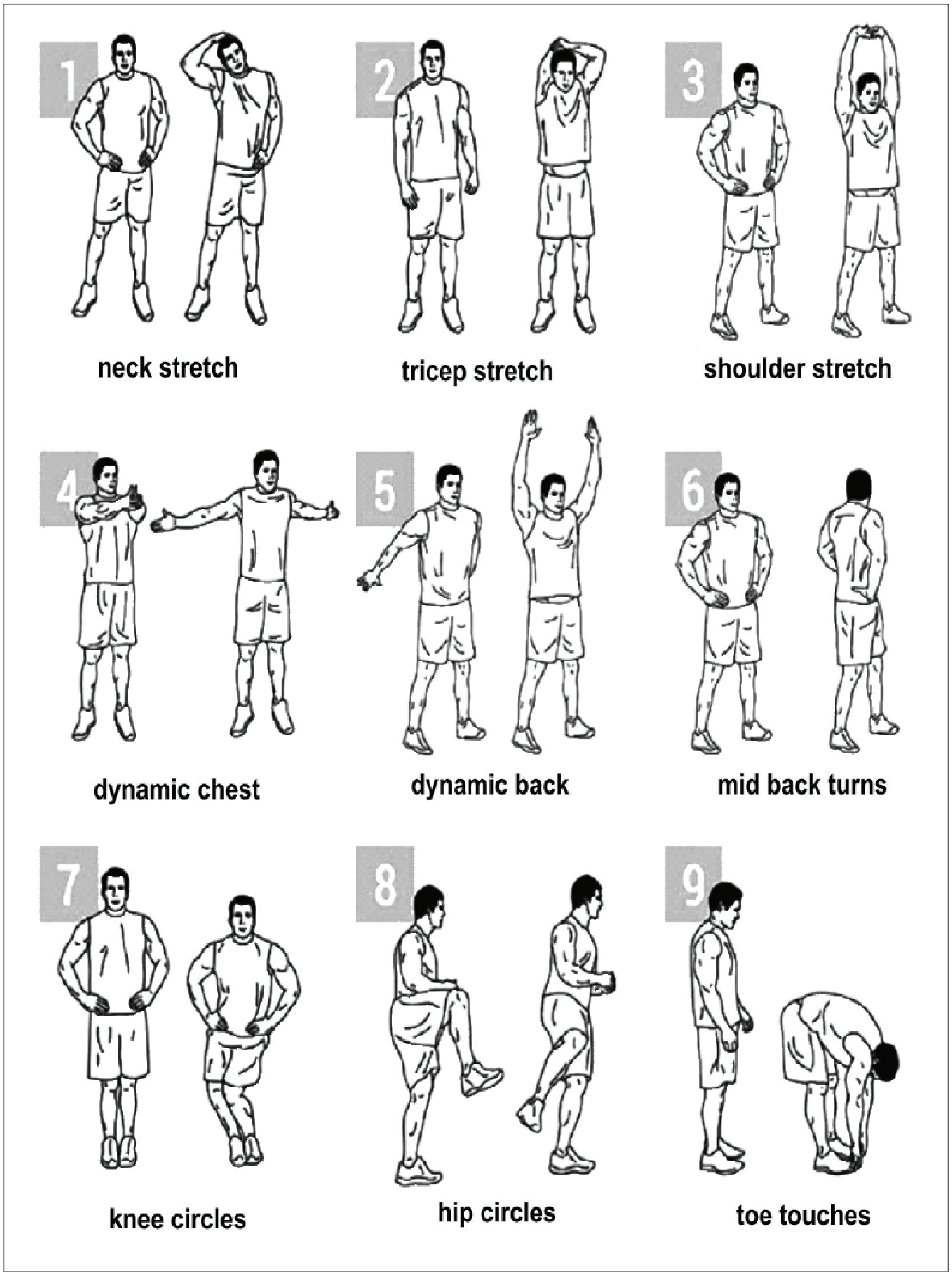


Fig.5.1a: Warming up Exercises

Source- https://darebee.com/workouts/4-minute-warmup-workout.html

Note

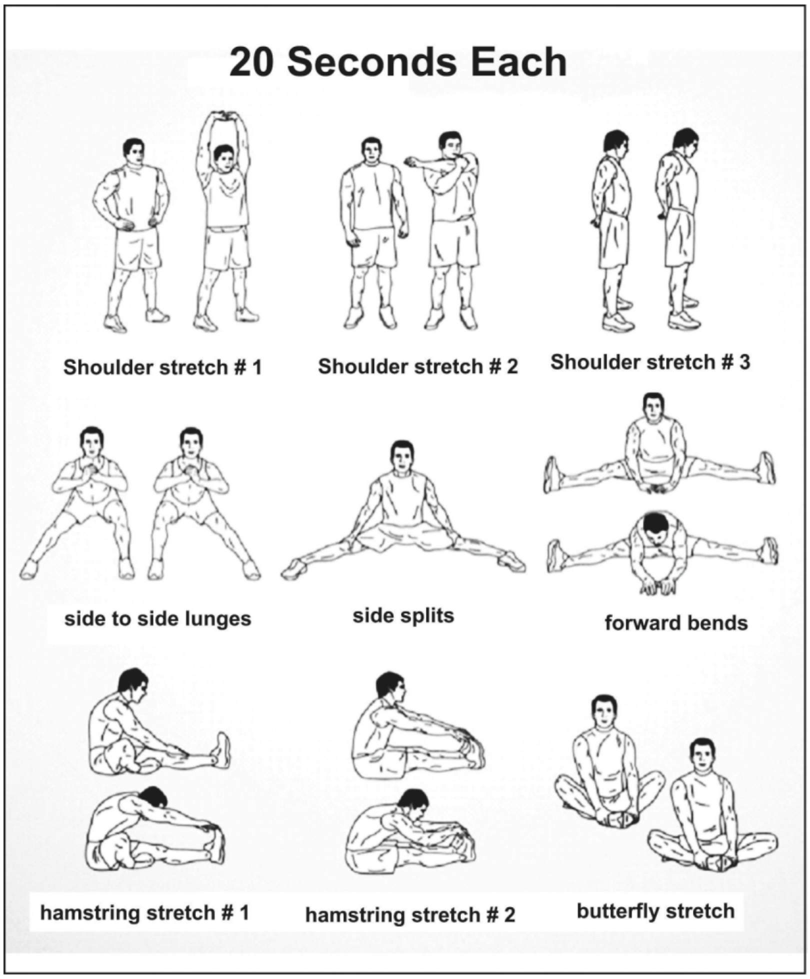


Fig.5.1b: Warming up Exercises

5.1.2 Effects of Warm up on Body Systems

- Enhances the body core temperature by 1 degree Celsius which brings basal metabolic rate (BMR) higher, resulting in better physical work capacity.
- Red blood cells carry more oxygen resulting in alertness and make you full of energy.
- Increases the stroke volume as per demand of the activity.
- Improves range of motion in joints.
- Enhances coordination, agility, reaction time.
- Increase in muscle blood flow,
- Increase in the speed of nervous impulse
- Nerve receptors work faster

- Improves flexibility and physical performance
- prevents sports injuries.

5.1.3 Types of Activity

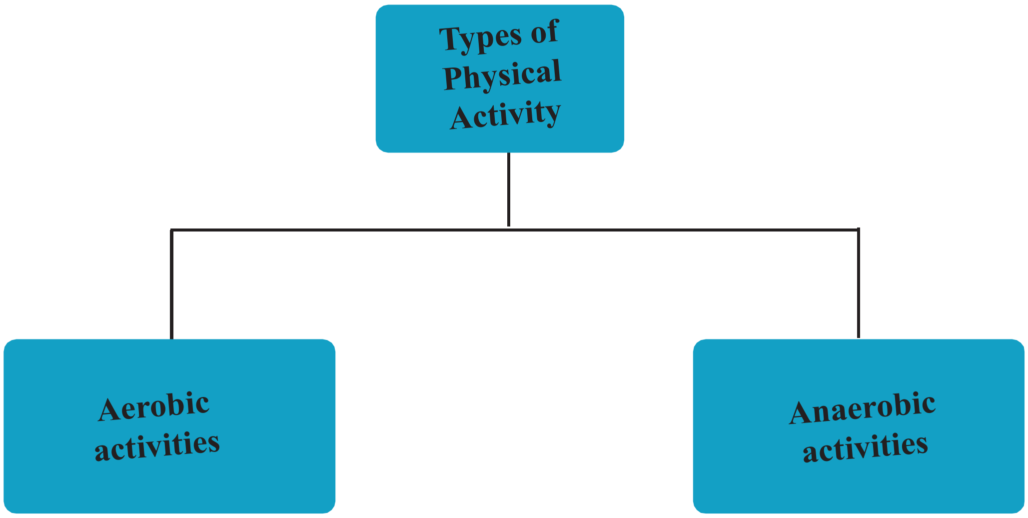


Fig.5.2: Types of Physical Activity

Aerobic Activities

Aerobic activities are those activities which are performed continuously with low and moderate intensity by the large groups of muscles, oxgen uptake is high. These activities require oxygenated blood for working muscles. For example, walking, running, skipping, swimming, rowing, hiking. Production of lactic acid in muscles in these activities is low.

Anaerobic Activities

Anaerobic activities are those activities which are performed in intervals with moderate to high intensity and low volume. The activity is either too fast or too intensive in which working muscle is unable to receive appropriate amount of oxygenated blood that triggers lactate acid formation. Sprinting, weight training etc. are suitable examples.

5.1.4 Components of Physical Activity

Effect of exercise or physical activity on body system depends on below mentioned factors:

- **Types of Physical Activity:** Different physical activities have varied energy demand, involvement of body parts, coordination & equipment used which produces a wide-range of load. Examples: running, weight lifting, playing tennis, playing kick boxing, badminton etc.

- **Intensity of Activity:** amount of physical power that the body uses during the activity is known as intensity of activity. It may also be calculated by the amount of force or energy exerted in relation to time. Example: intensity in running can be measured by calculating the speed which may further be illustrated in units as m/sec or km/hr. in weight lifting intensity can be measured in Weight in Kgs or in tons etc.
- **Volume of the Activity:** Work done during exercise or activity is known as volume of activity. It can be measured by duration, distance and frequency of an activity. Example in running activity volume can be measured in second, minutes, hours or in meter, km. etc. in weight lifting volume can be measured in repetition / time.

5.2 MUSCULAR SYSTEM

Muscular system permits movement of the body, maintain posture and circulates blood throughout the body. There are more than 600 muscles and 206 bones in our body that help us to produce force and movement. It permits movement of the body, maintains posture and circulates blood throughout the body muscles contracts and relaxes. The muscles are of three types and have different characteristics and functions which are mentioned below:

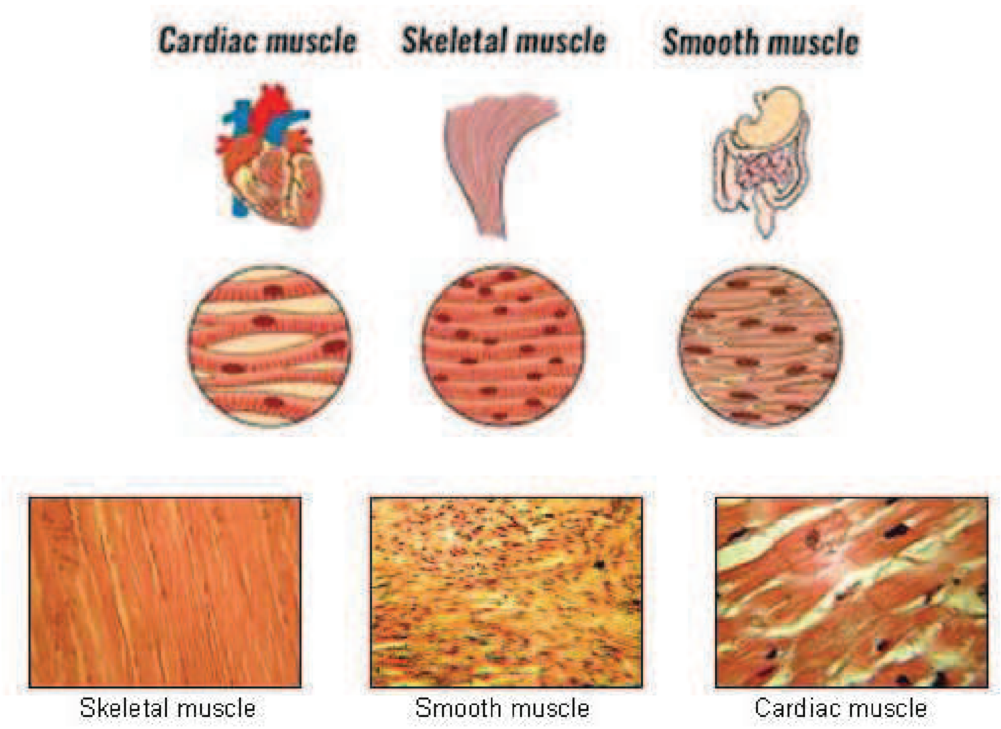


Fig.5.3: Types of Muscles

- **Smooth muscles** – It is an involuntary muscle which is not under control of conscious functioning of nervous system. These muscles are located in our organs like digestive system, respiratory system etc.

- **Cardiac muscles** – As per its name this type of muscle tissues are found in heart. It contracts automatically and quickly and repeatedly forcing the blood the throughout body. It work rhythmically without any fatigue. They are involuntary muscles in nature, so are not under conscious control.

- **Skeletal muscles** – known as striated muscle due to its appearance, skeletal muscle are under voluntary control or the conscious control. Contraction of this type of muscle results in pulling of the bones and creates movements. There are different types of activities which are controlled by the skeletal muscles. There are three types of muscle contractions:

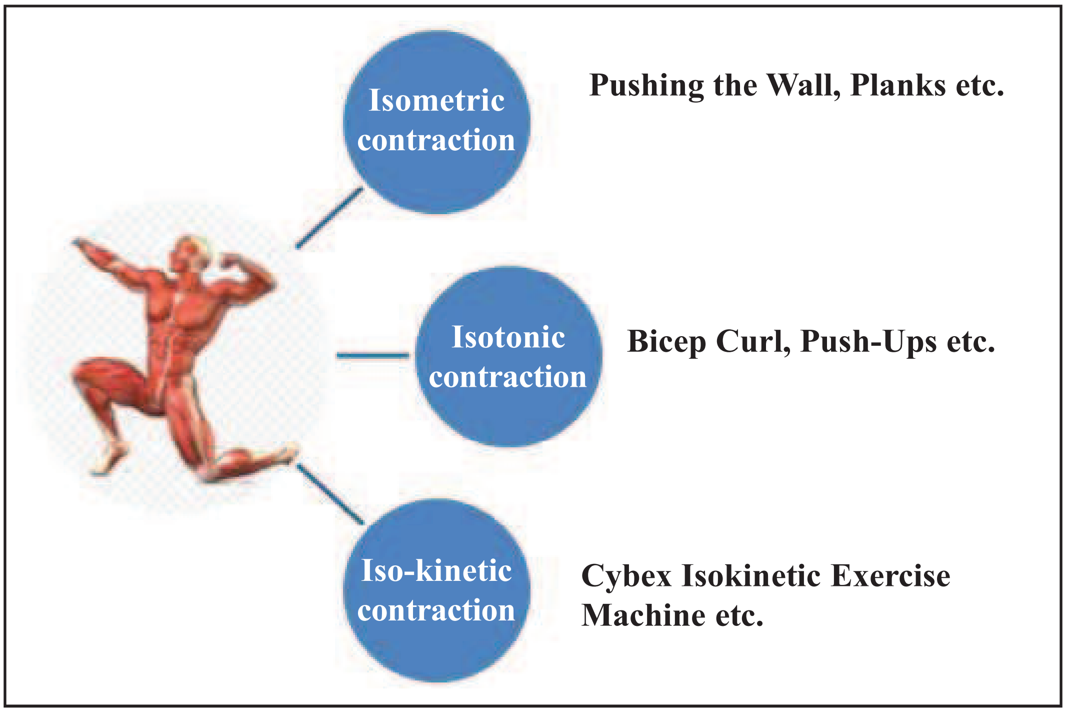


Fig. 5.4:Types of Muscle Contractions

i) **Isometric contraction**: during the process of contraction tension occurs but no visible change in the length of the muscle. Example pushing the wall, planks etc.

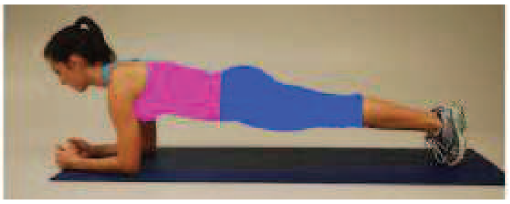
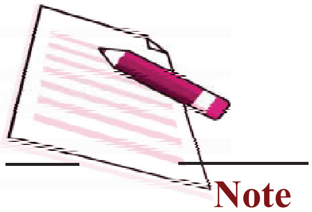


Fig. 5.5: Isometric Exercises



Note

ii) **Isotonic contraction:** when muscle's shortening and lengthening process is visible while lifting a constant load. Example bicep curl, push ups etc.

Fig. 5.6: Isotonic Exercises

iii) **Iso-kinetic contraction**: it is executed on a constant pace where muscle shortening is maximal over full range of motion. Example XYZ isokinetic exercise machine.

Fig.5.7: Iso-kinetic Exercise

Note

DO YOU KNOW?

Skeletal muscles are composite of muscle fibres which can be divided in to two categories: Type I is also known as slow-twitch fibres and Type II known as fast-twitch. Our body has both categories of fibres; the composition may change depending upon the training:

a) **Type I (slow-twitch) fibres** contracting slowly with less force, fatigue comes slowly which suits for long duration aerobic activities eg. Long distance races, Aerobics etc.

b) **Type II (fast-twitch) fibres** contract faster and produce great force but fatigue comes faster; anaerobic activities suit this types of fibres eg. Short distance races, 100 M, 200 M etc.

INTEXT QUESTIONS 5.1

1) Which type of muscle is under control of conscious functioning of nervous system?

2) Fill in the blanks with appropriate words.

   a) If you have 80% of .... fibres in your muscles, then you can give good timings in sprint rather than marathon.

   b) When we do exercise biceps curl repetition then we do .... muscle contraction.

   c) In weightlifting, somebody is lifting the weight of 80% of his capacity that is known as ....

   d) Contraction is executed on consistent pace where muscle shortening is maximum over full range of motion ....

ACTIVITY 5.1

Prepare a chart of 10 Isometric exercises and 10 Isotonic exercises.

Hint: Search on Internet

5.2.1 Effects of Exercises on Muscular System

When we do exercise, our muscle system responds differently according to long term or short term activity. These responses are known as acute responses caused

Note

by short term activity and chronic responses caused by long term activity. Their effects has been shown in the figure below:

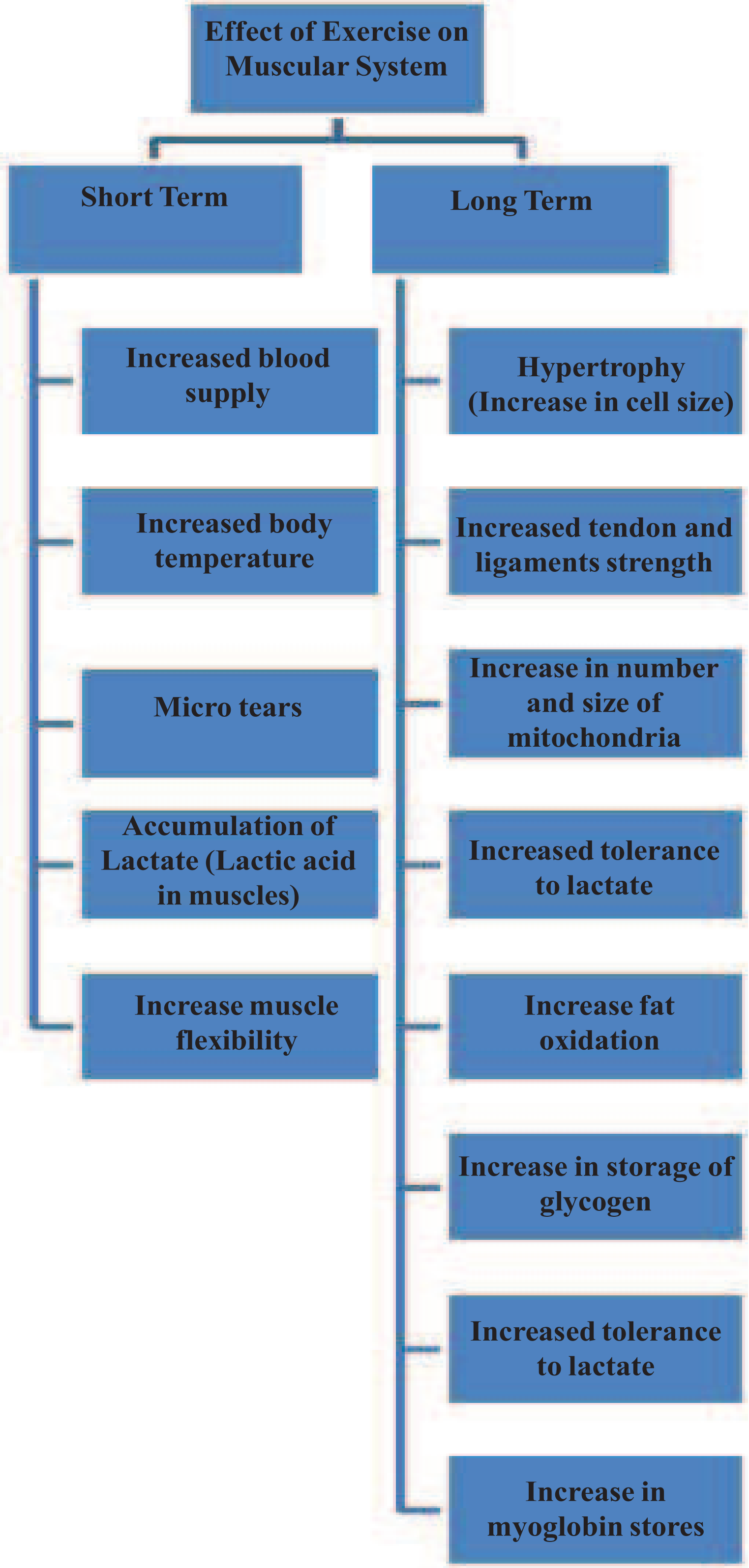


Fig.5.8:Effect of Exercise on Muscular system

Note

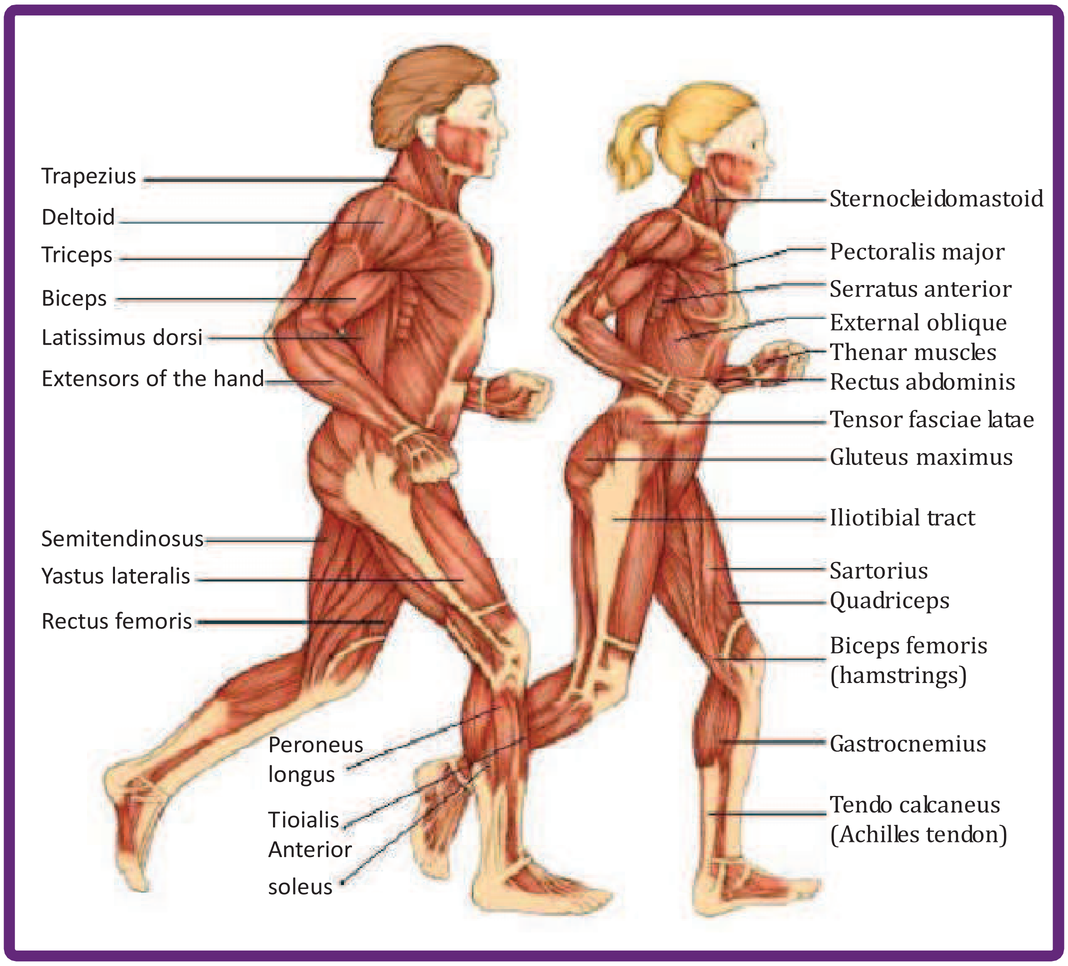


Fig.5.9:Muscular system

Source- Muscular Sytem Facts & Worksheets: https://kidskonnect.com - Kidskonnect, June 7, 2018

5.2.1.1 Short Term Effects of Exercise on Muscular System

- **Increased blood supply**

  As an effect of involvement in exercise our metabolic rate (rate of energy produced and released by the muscles) also increases gradually. Blood does not only work as to import oxygen but also to remove waste products like carbon dioxide.

- **Increased muscle temperature**

  Effect of short term activity includes rise of the temperature of the body that happens because of chemical break down of fats and carbohydrates.

- **Increase muscle flexibility**

  Due to increase in temperature during the activity muscles become more flexible, it means greater range of motion and possibilities of injuries are also reduced.

- **Accumulation of Lactate**

  When we do short duration high intensity activity then we experience burning sensation in our muscle, this results due to accumulation of lactate acid in our muscles which results in insufficient supply of oxygen.

- **Micro tears**

  In weight training, we put our muscle under stress that results in little tears in muscle fibres. Micro tears in our muscle cause pressure on nerve and never endings.

5.2.1.2 Long Term Effects of Exercise on Muscular System

- **Hypertrophy**

  Increase in size of the muscle due to increase in the size of muscle cell is known as hypertrophy. Continuous weight training results in increasing the size of muscle and strength.

- **Increased tendon and ligaments strength**

  Tendons are those connective tissue bands which connect bone to muscles and ligaments are those bands which connect one bone to another. Regular strength training activity increases the strength as well as flexibility of both and it has a positive impact on cartilages.

- **Increase in number and size of mitochondria**

  As you know continuous weight training leads to hypertrophy, size of muscle fibres also increase. In muscle fibres there are mitochondria which are also known as power house, they produce energy because of increase in fibres. Their space also becomes bigger and their size also increases which leads to better aerobic and anaerobic performance.

- **Increase in myoglobin stores**

  Myoglobin is protein is found in muscle tissue which is responsible for caring and storing of oxygen in skeletal muscles. Continuous and intensive activity increase the quality and quantity of myoglobin stored in your muscles. Myoglobin transports oxygen to mitochondria which produce energy.

- **Increase in storage of glycogen**

  Long duration activity like running done continuously for several days can improve the storage of glycogen in your muscles. Muscle glycogen does not need oxygen to give energy. It means that if you have good storage of glycogen then you can do long term and intensive activity.

Note

- **Increase in oxidation/metabolism**

  After doing continuous activity for a long period your body is able to produce energy from fats through aerobic glycolysis process. It becomes an easy process to get energy from fat, during the process of training.

- **Increased tolerance to lactate**

  Muscles can tolerate lactic acid and clear it fast during anaerobic training, in aerobic training due to increase in blood volume body gets more oxygen and removes lactate for our body.

5.3 EFFECT OF EXERCISE ON RESPIRATORY SYSTEM

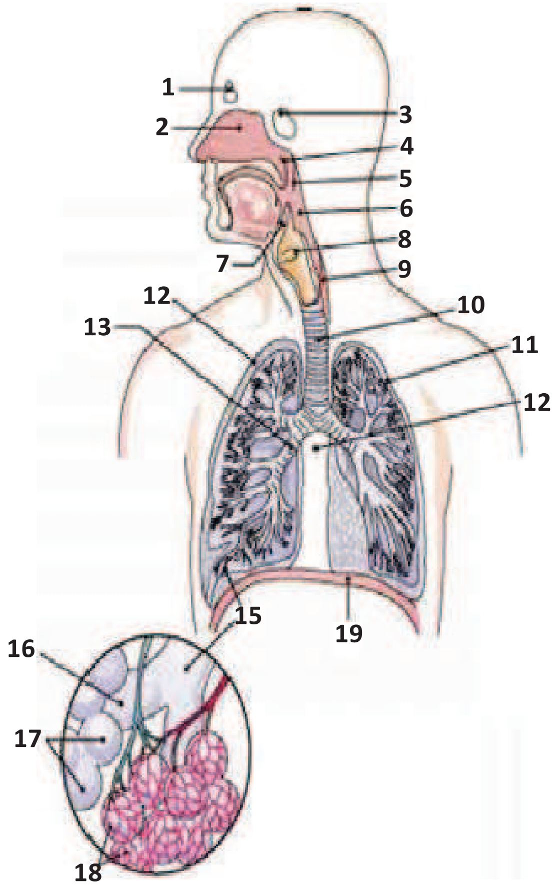
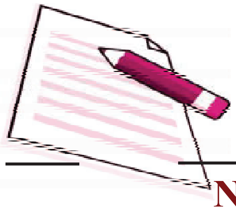


Fig.5.10: Respiratory System

System consists of series of organs responsible for taking in oxygen and expelling carbon dioxide. These organs are nose, pharynx, larynx, trachea, bronchi, lungs and alveoli. Respiration is exchange of oxygen and carbon di oxide in our body.



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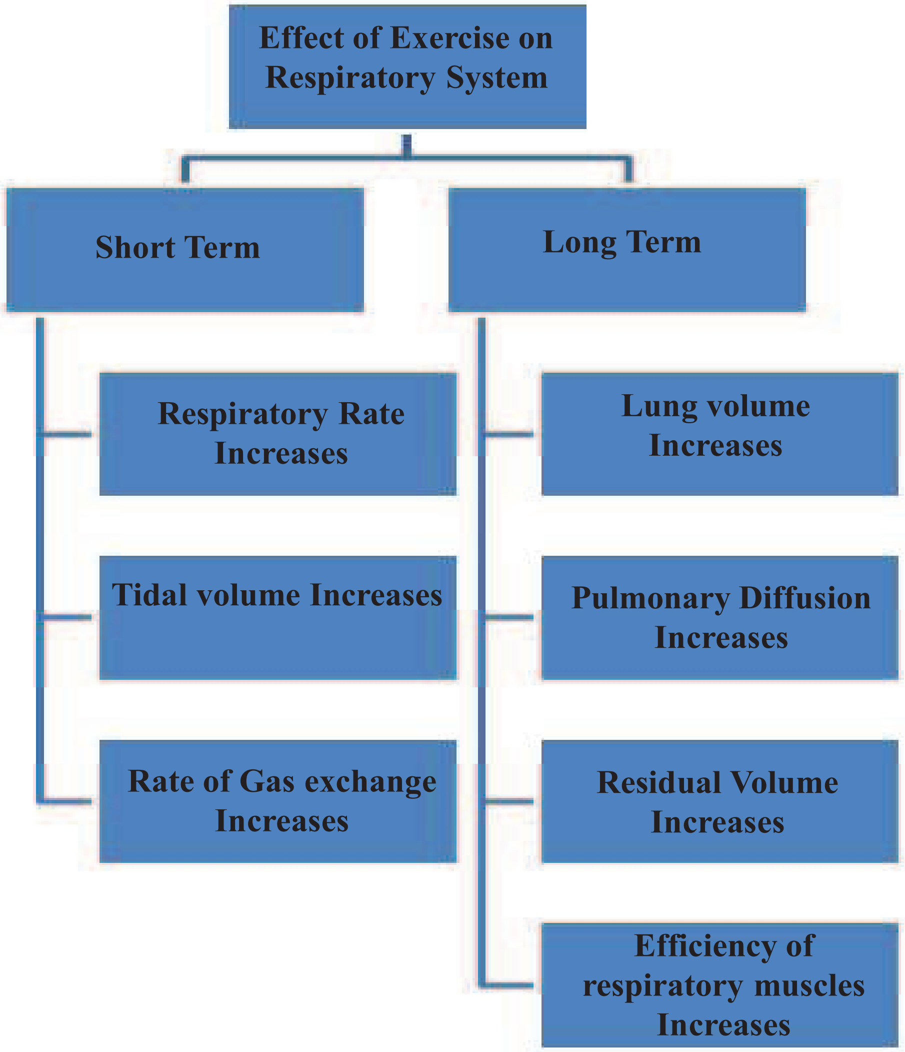


Fig.5.11: Effect of exercise on respiratory system

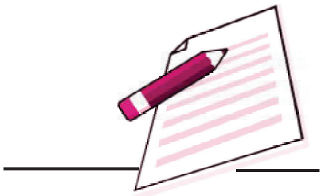
5.3.1 Short Term Effects of Exercise

- **Respiratory Rate Increases**

  During activity our muscles require oxygen and produce carbon dioxide; to match the demand lungs have to work hard in this process so that lungs can pump more oxygen into blood and out to the muscles. Our breathing rate increases, sometimes it may reach to 40 breaths per minute as their resting breathing rate is around 15 per minute.

- **Tidal volume Increases**

  The volume of air inhaled and exhaled in one breath is known as tidal volume. As you know pulmonary ventilation increases because of size in tidal volume and respiratory rate to meet increased oxygen demands.



Note

Rate of Gas exchange Increase

The rate of diffusion of gas between alveoli and blood also increases, during maximal exercise exchanging capacity for oxygen increases by 300%. Their short term effects provides many long term benefits.

5.3.2 Long Term Effects of Exercise

Efficiency of respiratory Muscles Increases

The strength and endurance of respiratory muscles increases due to rapid inhalation and exhalation to meet the oxygen demand by the body. That may be seen in larger lung volumes of trained persons.

Lung volume Increases

Endurance activity done for long period results in increase of volume and capacity of lungs. Larger volume of air exhale after deepest possible inhale is known as vital capacity. Vital capacity increases up to 5-6 liters as compared to inactive individual who is having 3-4 liters.

Pulmonary Diffusion Increases

During the maximal activity alveoli size increases, which provide more space to exchange oxygen and carbon dioxide.

Residual Volume Increases

The volume of air that remains in lungs after maximal expiration is known as residual volume. During the activity residual volume increases which helps to exchange the gases in normal limits, it is a store house where air can remain.

Optimum amount of oxygen flow in our body helps in concentration, alertness, makes immune system stronger, gives energy etc., it has also emotional and social benefits.

DO YOU KNOW?

The air that is inhaled is about 20-percent oxygen, and the air that is exhaled is about 15-percent oxygen, so about 5-percent of the volume of air is consumed in each breath and converted to carbon dioxide. Therefore, a human being uses about 550 liters of pure oxygen (19 cubic feet) per day.

https://health.howstuffworks.com/human-body/systems/respiratory/question98.htm

Note

5.4 EFFECTS OF EXERCISE ON CIRCULATORY SYSTEM

Our body requires oxygen during long term activities; this need is fulfilled by the circulatory system. This system consists of blood, heart and vessels. This system not only carries oxygen but also supplies nutrition to cells and tissues, removes waste product, and carries hormones etc. Circulatory system is affected in following ways (Fig. 5.12) during exercise.

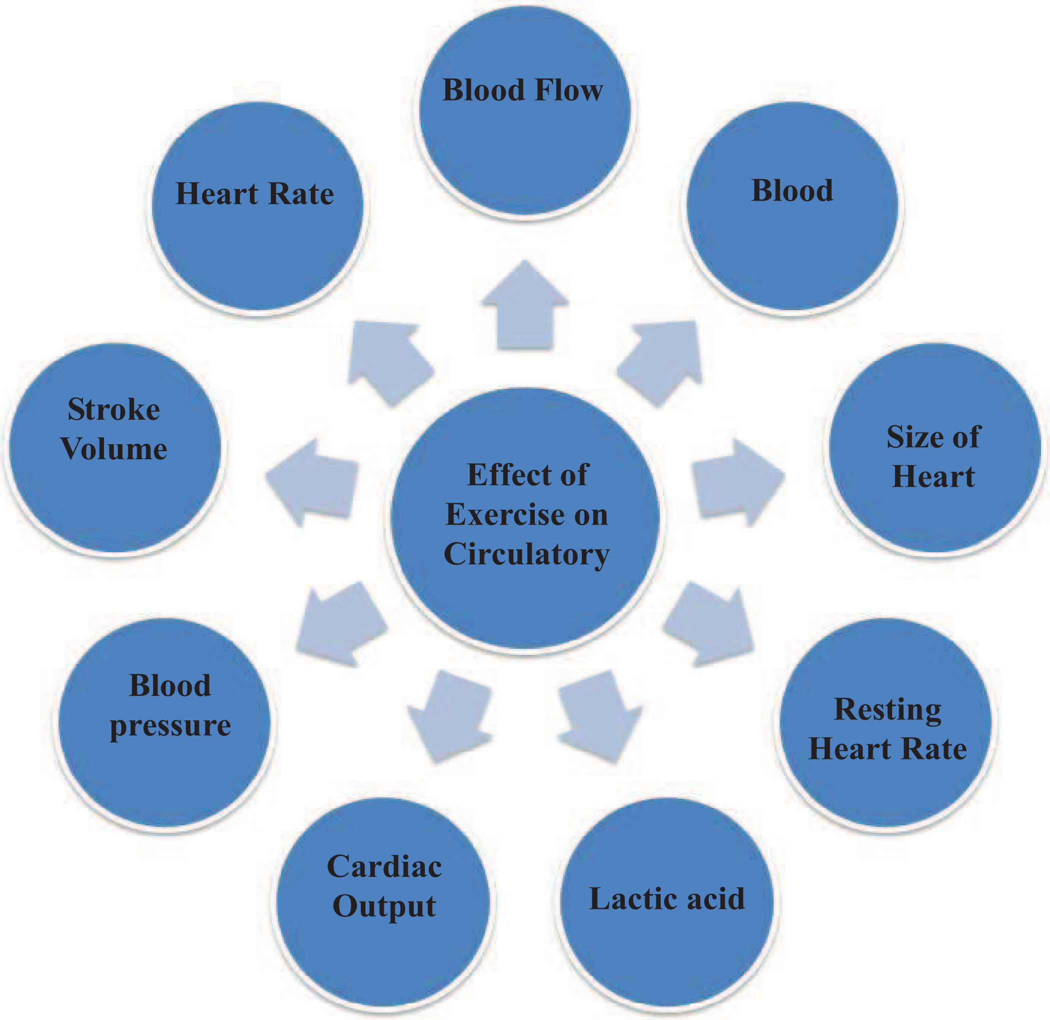


Fig.5.12: Effects of Exercise on Circulatory System

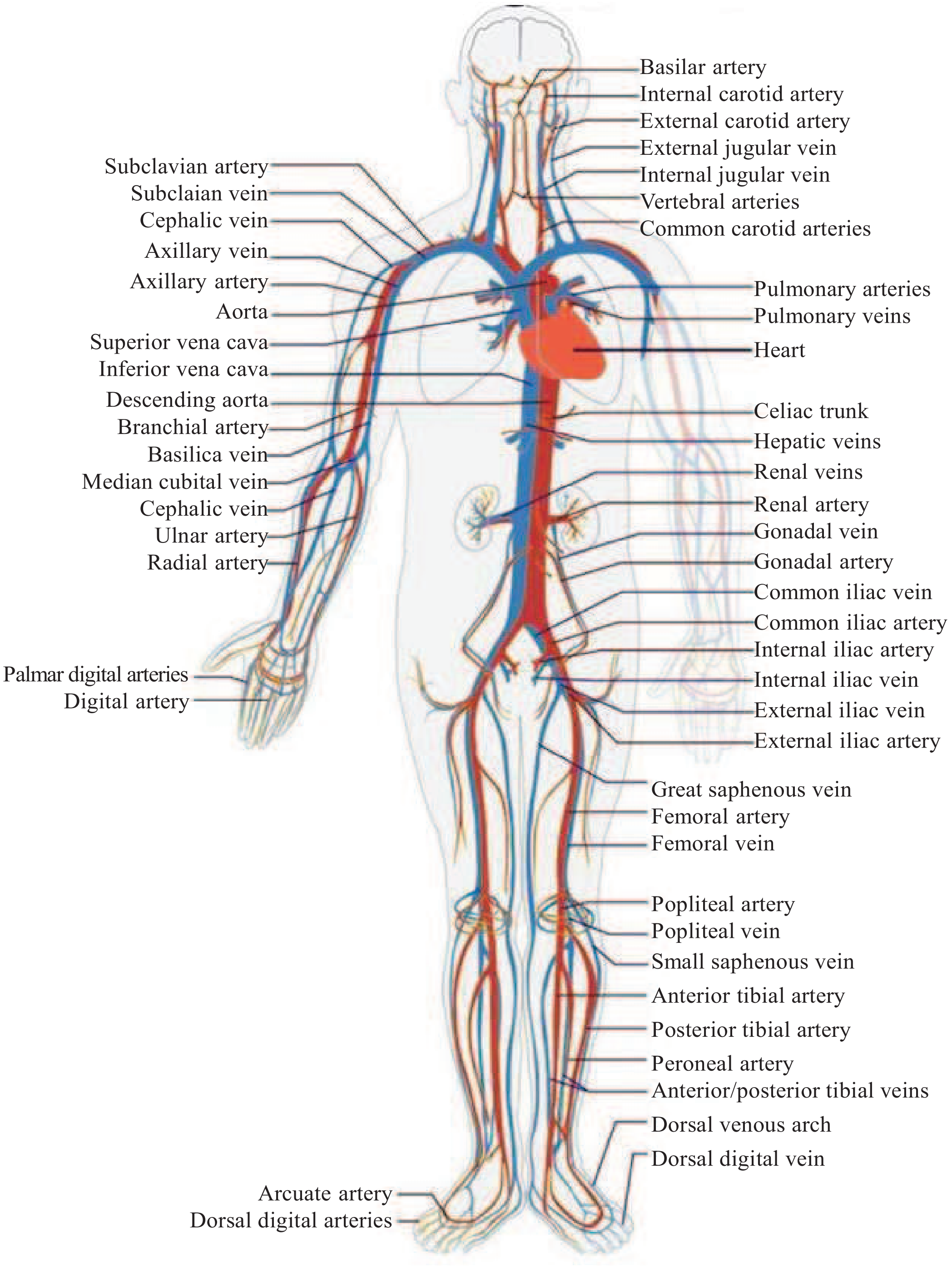


Fig.5.13:Circulatory Systems

- **Heart Rate Increase**

  During the activity heart rate increases, resting heart rate is ranging 60-80 beat per minute. The rate and intensity of heart contraction is affected by type of activity, volume, intensity of activity, age, environment etc.

- **Stroke Volume increases**

  Amount of blood pumped in every heart beat is known as stroke volume. It is a prime factor to determine the endurance capacity of an individual, due to small heart volume in females their stoke volume is also lower as compared to males. In resting position, an individual who is not involved in activity, his heart pump 70 ml/ bt and in same state an individual who does regular activity their heart pump 100 ml/bt.

- **Cardiac Output increases**

  The amount of blood pumped in one minute by the heart is known as cardiac output, it can be calculated by heart rate x stoke volume. Due to increase in heart rate and stock volume cardiac output also increases.

- **Blood pressure increases**

  Participation in Physical activity immediately increases the blood pressure. Upper limit is known as systolic and lower limit known as diastolic pressure. There are factors which affect the blood pressure like age, sex, disease, exercise, psychological factors etc.; It depends on the type of activity. However prolonged participation in physical activity, maintains the blood pressure level.

- **Blood Volume increases**

  Activity results in increase in blood volume due to increase in blood plasma and the number of red blood cells. Increase in volume of blood plasma results in decrease of blood thickness which leads to better blood circulation.

- **Blood Flow increases**

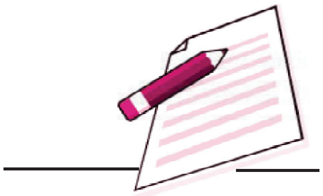
  Active muscles need more oxygen and nutrition, that requirement can be fulfilled by more flow of the blood. Reasons of Increase in blood flow are increase in blood volume, increase in capillaries etc.

- **Size of Heart**

  Long term continuous activity changes the function and structure of the heart. It is a pumping machine which supplies blood to the whole body. Continuous activities not only increases the ability of contraction but also increase the size of left ventricle.

- **Lactic acid**

  Long term effect of activity includes lower level of accumulation of lactic acid, due to good circulation of blood which contains good amount of oxygen.



Note

- **Resting Heart Rate**

  Due to good circulation and hypertrophy of heart the resting heart rate decreases.

DO YOU KNOW?

- Normal Blood pressure Range is systolic = 120- diastolic = 80 mmHg
- Athletic Heart is a syndrome in which human *heart* is enlarged, and the resting *heart* rate is lower than normal.
- An average adult heart rate ranging between 60 beats per minute to 80 beats per minute, on an average 72 beats per minute.

INTEXT QUESTIONS 5.2

Choose the correct option.

1) Amount of blood pumped in every heart beat is known as:
   - a) Cardiac Output
   - b) Blood Volume
   - c) Stoke volume
   - d) Residual Volume
2) Which of the following is not an outcome of exercise on muscular system?
   - a) Increased tendon and ligaments strength
   - b) Hypertrophy
   - c) Pulmonary Diffusion Increases,
   - d) Increase in myoglobin stores

Complete the sentence with one of the term given below.

3) Increase in storage of glycogen is an effect of exercise and comes under ....
   - a) Circulatory system
   - b) Respiratory system
   - c) Muscular system
   - d) None of above

Note

4) Explain the role of Heart while doing activity.

....

5) By what name is the volume of inhaled and exhaled air in one breethe known?

....

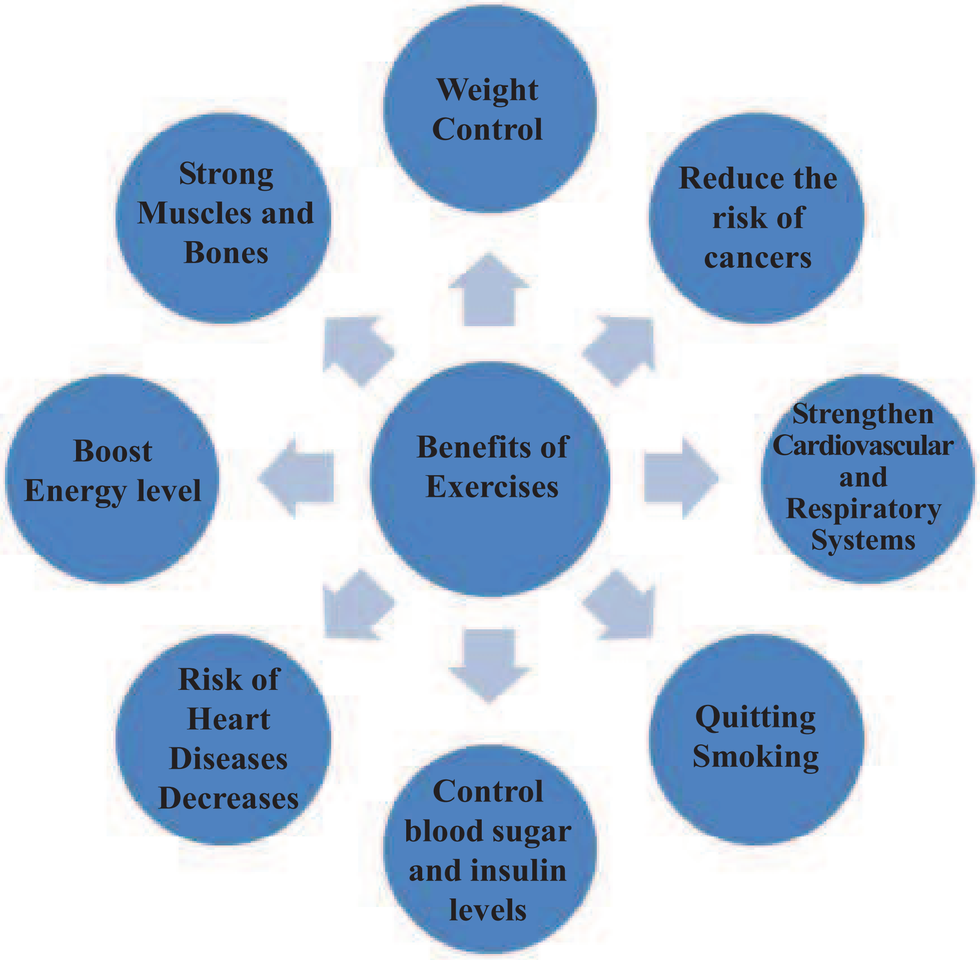
6) Explain the impact of increase in volume of blood pressure.

....

7) Explain the role of prolonged activity on the heart rate.

....

5.5 GENERAL BENEFITS OF EXERCISES



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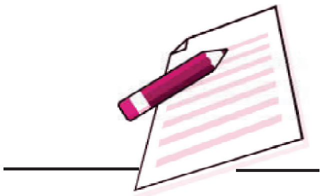

Note

DOU YOU KNOW?

Our body has

- 37.2 trillion Cells
- 200 different types of cells
- 100 billion skin cells
- 100 billion neurons in brain
- 127 million retinal cells
- 6 litres of blood
- 42 billion blood vessels
- 30 trillion red blood cells
- 23040 breaths per day
- 115200 heart beats per day
- Heart pumps nearly 1.5 million barrels of blood during a lifetime
- 640 muscles
- 360 joints
- 206 bones in adult
- 300 bones in children

5.6 CONCEPT OF YOG PHYSIOLOGY

Before learning yog, an individual must have the understanding about anatomical and physiological aspects because incorrect and unsafe practices can lead to medical problems and it may also create new problems. An individual must know the individual differences and effects of yog on our body. Yog has been practised for thousands of years for development of physical, mental and spiritual personality. Physiological aspects of yog can be observed in shuddhi kiriyas, pranayama and asanas.

5.6.1 Physiological Aspects of Shuddhi Kriyas

- These help to prevent respiratory disease like bronchitis, asthma etc.
- These help to remove excess of mucus from our body, to cure cold and cough.

- These help to cure digestive system disorders like acidity, indigestion, constipation etc.
- These clean colon, removes gas and makes passage clear.
- Nauli massages muscles, intestine, excretory organs etc.
- Jal neti removes pollution from nasal passages and allows air flow without obstruction; and stimulates nerve passing from nose to improve the functioning of brain.

Physiological Aspects of Pranayam

- Helps in cooling the body systems and relaxes the eyes, nose and ears.
- Helps to cure the disease like blood pressure and purify the blood
- Its increases the flow of oxygen in blood that keep body fit and healthy.
- It strengthens the nervous system, relax the function of brain.
- It tones the organs and digestion.

Physiological Aspects of Asanas

- Asanas improve strength, flexibility and aerobic capacity.
- These provide positive changes in toning of muscles.
- These improves ability to recover from injury
- These has positive effect's on isometric and isotonic muscle contractions.
- Play important role in disease like arthritis, back pain, hypertension, various respiratory diseases, sinusitis, diabetes, obesity, indigestion.
- Help in reduction in blood pressure, cholesterol, body fat, blood glucose level.
- Improve the functioning of respiratory system, immune system, digestive system.

INTEXT QUESTIONS 5.3

Fill in the blanks to make the sentences meaningful.

1) Through shuddhi kriyas digestive disorders like ...., ... and .... can be cured.

2) Practice of pranayama strengthens the nervous system and improves its ....

3) Asanas help to gain .... of muscle.

Note

WHAT YOU HAVE LEARNT

- Three types of physical activities are: aerobic activities, anaerobic activities and flexibility exercises.
- Warming up is the series of exercises done before the main activity which has physiological and psychological benefits.
- In human body we can classify muscles in three groups as per their characteristic and functions; that are smooth muscle, cardiac muscle and skeletal muscle.
- Types, intensity, volume of the physical activity are the component of load.
- Skeleton muscle has two types of fibres namely slow-twitch fibres and fast-twitch ones.
- Effects of exercises on muscular system include increased blood supply, muscle temperature, muscle flexibility, accumulation of lactate acid, micro tears, DOMS, hypertrophy, increased tendon and ligaments strength, number and size of mitochondria, myoglobin stores, storage of glycogen, storage of fat and tolerance to lactate.
- Effect of exercise on respiratory system includes increase in respiratory rate, tidal volume, rate of gas exchange, efficiency of respiratory muscles, lung volume, pulmonary diffusion and residual volume.
- Effect of exercise on circulatory system includes increase in heart rate, stroke volume, cardiac output, blood pressure, blood volume, blood flow, size of heart, lactic acid and resting heart rate.
- General benefits of exercises include weight control, strong muscles and bones, boost in energy level, risk of heart diseases decreases, **control on blood sugar and insulin levels, quitting smoking,** strengthening cardiovascular and respiratory systems and reduction in the risk of cancers.
- Physiological effects of shuddhi kiriyas, pranayam and asana

TERMINAL QUESTIONS

- List the effects of exercises on our Cardiovascular System.
- Explain the long term effects of exercise on muscular system.
- Explain the short term effects on cardiovascular system.
- Describe the changes that come in Respiratory system after physical activity.
- How does Yog affect the Physiological values of an individual?

GLOSSARY

- Fatigue: weakness in something, such as a metal part or structure, often caused by repeated bending.
- Metabolic Rate: the amount of energy used by an animal per unit of time.
- Accumulation: a mass or quantity of something that has gradually gathered or been acquired.
- Glycolysis: the breakdown of glucose by enzymes, releasing energy and pyruvic acid.
- Contraction: the act, process, or result of making or becoming smaller or shorter and broader.
- Osteoporosis: a medical condition in which the bones become brittle and fragile from loss of tissue, typically as a result of hormonal changes, or deficiency of calcium or vitamin D.

ANSWERS TO INTEXT QUESTIONS

5.1

1. Skeletal muscle,
   - a) Fast,
   - b) Isotonic,
   - c) Intensity,
   - d) Isokinetic

5.2

1. Stroke volume,
2. Pulmonary Diffusion Increases,
3. Muscular system,
4. To Pump the blood,
5. Tidal Volume,
6. Blood circulation,
7. Decrease

5.3

1. Acidity, indigestion and constipation,
2. Functions,
3. Tones

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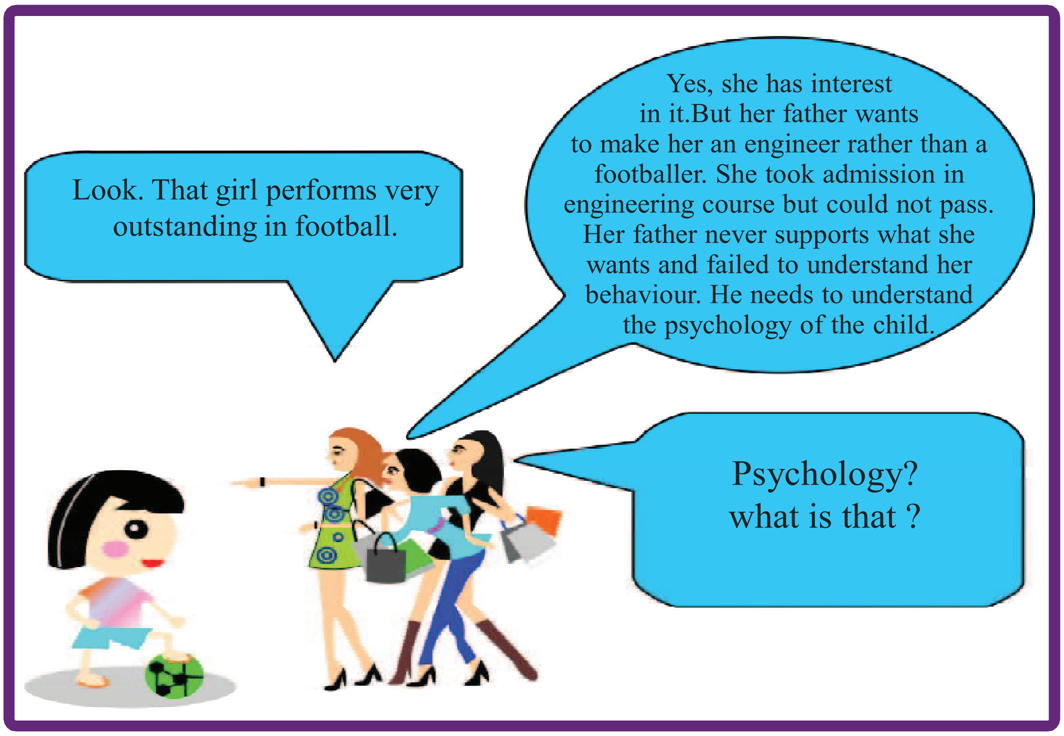
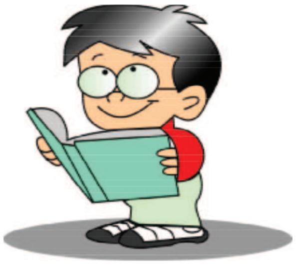
6

PSYCHOLOGICAL ASPECTS



From the above conversation we can make out that to understand child psychology, parents must know about the psychology. As the child grows she/he faces many challenges as an adolescent. What type of personality she/he possesses, what are the driving forces which compel her to do something. What is her potential to learn things? Also many factors which could enhance her/his performance. Let us find the answers to all the questions that have arisen from the active conversation.

OBJECTIVES



After studying this lesson, you will be able to:

- identify the psychological characteristics and problems of an adolescent;
- explain the concept of personality, learning and motivation;

Note

- Analyze the psychological factors affecting performance and
- assess the emotional and psychological impact of yog.

6.1 CHARACTERISTICS OF ADOLESCENT

A child passes through the different stages of growth and development such as infancy, childhood, adolescence and adulthood. Adolescence is the transitional period between childhood and adulthood. Adolescents are teenage. It is very difficult to say exactly when adolescence starts. However, adolescence stage starts from the on-set of puberty to the age of maturity; it generally starts from 10 to 19 year. During the on-set of puberty there is a spurt in physical growth and appearance of sex characteristics which continue upto first 2 years and this phase is also known as beginning of adolescence stage. Onset of puberty in boys is marked by nocturnal emissions and in girls it is marked by first menstrual cycle.

There are various changes that occur in adolescents such as physical changes, cognitive changes, social changes and emotional changes. These changes occur due to hormonal fluctuations in the body of adolescents. These changes are based on a uniform pattern but rate of uniformity may not be the same in all adolescents; it means all adolescents do not develop at the same time but changes occur during this stage. Some may mature too early and some mature too late. For example, the two adolescents of same age may not have the same height, weight or same intellectual talent but they will achieve their maximum height, weight or intellectual development in this stage. The characteristics pertaining to adolescent stage have been explained in detail given below:

Physical changes: In this stage, the child achieves his/her maximum limit in physical growth. Bones and muscles achieve their final shape. Growth and functions of organs are at their peak. All glands become almost active. Height and weight increase and achieve their final shape. The succession of these events during puberty is consistent among adolescents, however the rate of uniformity in growth may not be the same in every individual. For this reason, it is difficult to find this period in chronological years. Additionally, the child is sexually matured and able to reproduce his/her own kids. Besides, the quantity and quality of hair increase on the body is related to physiological maturity of children. The voice becomes harsh in boys and becomes soft in girls.

Emotional changes: Emotions such as anger, love, fear, and happiness etc. are instable, intense, and an individual is unable to control them, and sometimes are irrational in the beginning of this stage. If things are going in a right way he may become happy. So, at the beginning of this stage the child is often irritable, can

easily get excited and explodes emotionally instead of trying to control his feelings; however, in later years of adolescence stage he is able to control his feelings and becomes emotionally stable. In addition, the child is very much concerned about his self-consciousness, self-respect and personal pride. For example, in this phase they may get embarrassed by scolding by their parents in front of others.

Social changes: Adolescents change their relationship with the family. They separate themselves from their parents. The adolescent gives importance to the group or circle of his/her friends and becomes loyal to them rather than their parents. It can be said that they develop the strong emotional attachment and trust for their group and may have conflicts with their parents. Apart from this adolescents want to feel that they are independent; therefore, they don't want to take any help from their parents to solve their problems. Additionally, she/he wants acceptance rather than rejection in their peer group. At the end of this stage a child is able to behave according to the norms of the society as he may perceive the difference between right and wrong.

Cognitive changes: Adolescents thinking becomes abstract. Now they can think over an issue with logic. Sometimes they analyze the things critically, i.e., how things are and how they may be, so that they question everything and their parents feel that their child questions everything just for the sake of argument. In this stage they become rational. They develop the reasoning power and interpret everything in the environment in their own way. This is clearly seen in the adolescent's increased interest in thinking about interpersonal relationship, politics, philosophy, religion and morality, that involve such abstract concepts as friendship, faith, democracy, fairness and honesty. They have strong likings and disliking for certain events. For example, if the boy/girl has a strong liking for special type of clothes s/he shall prefer to wear the same.

INTEXT QUESTIONS 6.1

1) Match the following

	Column A		Column B
a)	Social changes	i)	Body
b)	Emotional changes	ii)	Interpersonal relationship
c)	Cognitive changes	iii)	Anger
d)	Sexual changes	iv)	Mind

Note

2) Adolescent stage generally starts from ....to .... years.

3) Adolescent stage is the transitional period between childhood and ....

DO YOU KNOW?

The adolescence came from the Latin word “adolescere” which means “to grow” or “to grow to maturity”. Maturity involves not only physical but transformation also mental growth. It is a stage which fulfills the gap between the childhood, and adulthood also known as of a child into an adult.

6.2 CONCEPT OF PERSONALITY

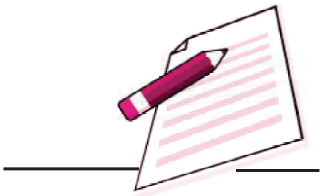
For a lay-man, the term personality means a good looking and attractive person etc. Physical appearance often defines personality. How an individual talks and interacts with others are the indications of a good personality. Persons who is not good looking or not well dressed or does not interact properly is considered to have a poor personality. The external behaviour or character of individual is considered to define the personality. Sometimes personality is understood as equivalent to one’s character. But scientifically this is not a true concept of personality. Now we will talk about the definition of personality given by Allpart which would helps us to understand personality in a better way.

Personality is dynamic organization of those psycho-physical systems which determine her/his unique adjustment to his environment.

As per the psychologists it can be described that personality not only involves the physical characteristics but also includes the traits of the individual which are responsible for their behaviour, physique and their social adjustment which is the result of long observation. Personality is described as sum of all inherited tendencies as well as acquired tendencies of environment. Basically individual’s structure of personality depends on the heredity and environment.

6.2.1 Personality Development through Physical Education and Sports

The development of personality through physical education programs and sports activity has been a topic of interest for the sports psychologists right from the time the term came into existence. Psychologists identified the determinants which directly or indirectly influence the growth and development of personality. Although there are a large number of determinants, which influence the development of personality, such determinants have been broadly grouped into five general categories and these are given below.



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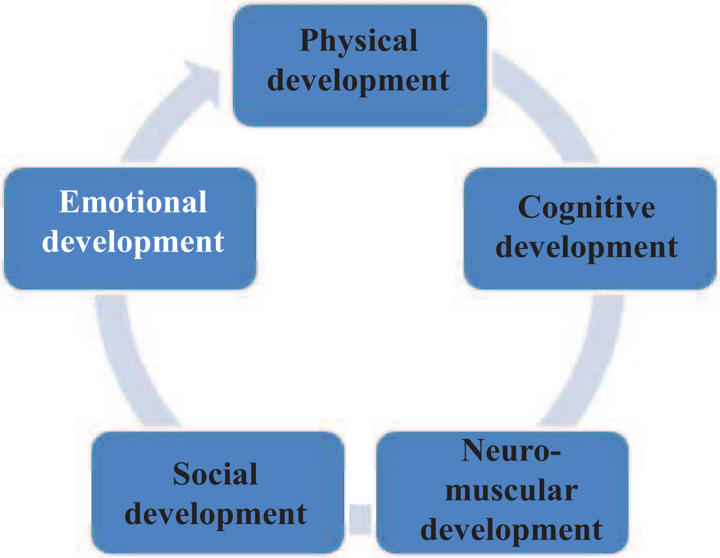


Figure 6.1: Determinants of Personality

A sport is understood as all forms of physical activity that contribute to physical fitness, mental wellbeing and social interaction. Sport includes play, recreation, casual and organized competitive sport and indigenous sports or games. Athletes may have a lot of opportunities to participate in competition at higher level.

Sport is the medium for athlete development in which they develop not only physically but emotionally, socially and cognitively. These developments have their own importance that helps an individual to become mature to play a vital role in society. Therefore sport has been followed by many different societies. Let's talk about the development of individual in terms of physical, cognitive, neuro-muscular, social and emotional aspects, which have been explained in detail below.

Physical Development

The functional quality of the organic systems could be improved through running, jogging, walking or participating in other sports activity such as volleyball, football, basketball, swimming or any other activity. Players improve the ability to delay their fatigue, ability to recover fast than who do not participate in the vigorous physical activity, which means those who are regularly participating in the activity can perform their daily routine work without fatigue. Furthermore, they improve their health related components such as cardiovascular function, body composition, strength, flexibility, that are essential for physiological functioning.

Social Development

Sports play a very important role in social development. Players have to participate in competition and to perform as per the rules. In this way an individual

may carry his improved behavior to the society and behave as per the rules developed by their society. She/he can adjust himself in the group and could develop his healthy interpersonal relationship with other individuals as they have developed the quality of friendship and social interaction in sports. For example, in sports a captain has to consider every weak player as important as elite player. Because team game cannot survive on a few good players of the team; instead, it depends on the each and every player of the team. In this way an individual learns how to develop cooperation and coordination with others. Learning of languages, customs, traditions, ideas and skills are improved with participation. Group play has its own importance that makes a child to share his things with other team members. In addition, the social values namely cooperation, understanding, friendliness, sportsmanship, discipline, dedication, conformation to laws, respect for duties and others rights, are acquired through participation in physical activity and sports instead of inborn qualities of the individual, required in the society.

Cognitive Development

A player has to perform very efficiently to get success in the sports. Without thinking and analyzing the competition environment in sports, a player cannot perform well. In this way he acquires knowledge of different rules and regulations of game. She/he refines her/his skills and learns different strategies to apply in sports competitions. She/he is able to take the right decision for his action in a difficult situation in the competition. In this way decision making ability, thinking, reasoning, and critical thinking influence with the participation in sports.

Emotional Development

When a player participates in the competition she/he has to face many outcomes that are beyond his control. Sometime She/he loses her/his match in the competition, but still behaves normally rather depressed, which is called emotional development. There is no influence of results of match on the emotions.

In some cases she/he has to control his/her anger in the match and coordinate as per the rules and regulations of the game which develop the controlling power among the athletes. Self respect, self-consciousness, and love etc. are the basic needs of the individual that are fulfilled through sports activity.

Psychomotor Development

A player learns a number of fundamental movements through sports such as walking, jogging, running, turning, twisting, pushing, pulling, throwing, catching, passing etc. that help to make him physically fit, mentally sound, and socio-emotionally adjustable. If a player is very much interested in particular sport he also learns the required specific as well as complex skills that enable him/her to perform the task with minimum expenditure of energy and time. Efficiency is

Note

achieved through maximum certainty in the performance. Player is able to meet the performance goal, or end results with maximum certainty. For example, kicking a football into the goal post for goal. Furthermore, the minimum energy notion describes that a skilled performer is able to organize the skill in such a way as to which reduce the physical and mental demands of the task. Third quality of player is to use less time to complete the task. For example, sprinters or swimmers have to perform with less time as their primary goal.

DO YOU KNOW?

The word personality derived from the Latin word "persona" which means the mask.

6.2.2 Concept of Learning

Learning may be defined as a relatively permanent change in behaviour. This change could be due to a result of instruction, experiences, study and practice. These internal changes are not visible but can be seen from behavior and performance. Learning can be divided into three domains.

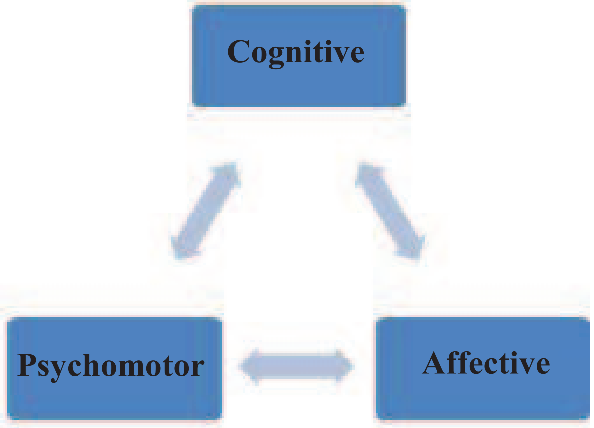


Figure 6.2: Domains of Learning

- **Cognitive** – In teaching cognitive learning the physical educator or instructor is concerned with increasing individual's knowledge, enhancing problem solving abilities, clarifying understandings and developing and identifying concepts. They also deal with developing the reasoning level, evaluation and critical thinking of the individual. The prime focus of this domain is mental process that can be obtained and improved through learning.

- **Affective** – In this domain the physical educator is concerned with attitude, appreciations and values. The physical educator through his/her teaching develops the proper and positive attitude towards the physical activity and

sports. Teacher may also focus on developing the values such as sportsmanship, team work, dedication, sportsmanship, followship and leadership. In addition, appreciation is one of the factors which influences confidence level of the individuals, which affect learning, for example, a teacher appreciates his students for their good performance in the physical education which helps to further improve his performance.

- **Psychomotor** – In teaching, psychomotor learning is concerned with the acquisition and refinement of motor skills. A teacher has to focus on the acquisition of the skills that include both fundamental motor skills as well as specific skills in various sports activities, keeping in mind the physical condition, age, and learning stage of the individual.

Motor Skill Learning

Motor learning is an internal process which reflects the level of an individual's performance abilities to execute the skill. Skill learning is the acquisition of Motor Skill as a result of practice. For learning an individual has to practice a lot. The assessment of the skill learning can be done by observing the individual's motor skill performance. For example, one goal is to learn a tennis serve, to assess how well an individual learned the tennis serve, the teacher would observe the person performing the skill. When students learn the skills through practice their performance improves and becomes consistent. These changes in the skill performance lead the instructor to conclude that the learning has taken place.

Learning can be influenced by various factors like readiness, motivation, reinforcement, personality, individual differences and level of developmental stage. An individual's anxiety, attention and previous experiences can influence performance. There are three stages of skill learning such as cognitive, affective and psychomotor. As the individuals are not same in their level of performance, some may be beginners and some may be average or advanced, the teacher should be familiar with the stages of the learning so that he can assess their level of performance. If the individual is in advanced stage, there is no need to practice that particular skill. It may be concluded that skill learning has taken place. The detailed explanation of the different stages has been given below.

Stages of Learning

Cognitive Stage

The first stage of learning is cognitive stage. During this stage the learner has to focus on the verbal and visual instructions of the skill. In this a teacher gives verbal instruction regarding the skill, and discusses the nature and importance of the same skill. A learner needs to focus on the instructions. In this stage the learner may be concerned with such questions as how do I stand in football? How do I kick the ball for passing? How do I score in this game? Apart from this, visual instructions in terms of videotape or demonstration of the skill of the performer executing the same skill could also be used.

After collecting information through verbal and visual instructions, a learner makes his plan of action based on his understanding of the skill. He attempts to perform the skill based on his understanding of the skills. She/he commits a lot of mistakes at this stage, his performance becomes inconsistent. She/he performs very slowly. Sometimes the movement performed in this stage is inappropriate. The skill may appear to be rigid in nature. Besides, the confidence level of the learner is weak in this stage.

Note

Motor Stage

Second stage is the motor stage which is also referred to as associative stage. At this stage basic information of skill has been acquired by the individual although he has not achieved the mastery over the skill yet. S/he still needs to focus on the refinement of the skill. It can be said that this phase is more motor rather than the cognitive in nature. An individual has to practice more and more.

This stage includes the process of refining, modifying and adapting the skill. This phase is based on trial and error method, in which he is performing the skill a number of times and is aware of errors made in executing the skill. At the end of this stage the learner achieves some coordination.

Autonomous Stage

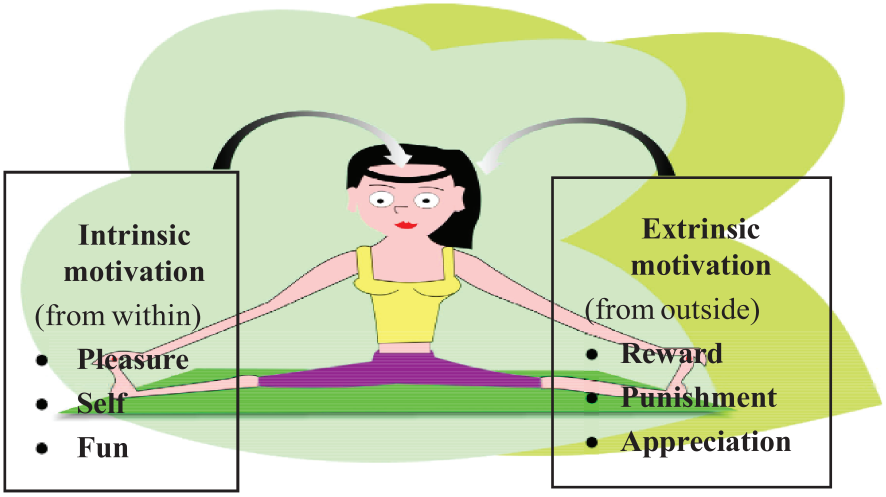
This is the autonomous stage in which the movement becomes almost automatic. Individual is able to detect and correct errors and their performance becomes consistent. It is difficult to determine exactly her/his progress from motor stage to autonomous stage. In this phase s/he executes the skill effortlessly and in a well coordinated manner. The confidence level of the learner is high in this stage. S/he has adapted and achieved the mastery over the skill in this phase.

6.2.3 Concept of Motivation

A boy wakes up early in the morning to practise cycling. Most of the time he fell down and got injured but never left to learn cycling. He wants to achieve excellence in cycling so that he can earn money. His strongest need forces him to perform well and practice more and more in cycling.

So we can say that 'why' and 'how' of behavior lie in the key word "motivation". There is something which forces us to act or behave in a particular manner at a particular time. That force is responsible for our behavior. Motivation depends on the needs. If need is high, motivation level will be high, if need is low motivation level will also be low. Lander's (1978) said that motivation can not be observed directly but rather it is inferred from goal-directed behavior.

Motivation can be broadly categorized in three parts: intrinsic motivation, extrinsic motivation and amotivation.



Intrinsic motivation is a natural urge of the human beings. Individuals are naturally motivated and perform an act because of their interest. They perform for their pleasure, own reward, satisfaction, genuine interest in the activity

Extrinsic motivation – In this kind of motivation the source of pleasure does not lie within the task. There is no functional relationship to the task. Individual learns not for his own sake, but as a means of obtaining desired goals or getting some external reward. For example: Honor, money, receiving praise, Rewards, avoiding punishment etc.

Amotivation means lack of purpose and intentionality in one's action. It can be described as absence of motivation. The Individual is not motivated for a particular activity. If we compare extrinsic motivation with intrinsic motivation, intrinsic motivation as a source of natural inspiration and stimulation, and brings better results. Therefore, it is better to use intrinsic motivation. When it is not appropriate to make use of intrinsic motivation, use of extrinsic motivation should not be suspended. Type of motivation should depend on learning situation and nature of the task.

INTEXT QUESTIONS 6.2

Choose the correct option-

1) Personality is derived from the Latin word "Persona" which means

   a. Face b. Behaviour

   c. Attitude d. Mask

2) Psychomotor development is related to

   a. Physical Development b. Social Development

   c. cognitive Development d. Motor Skill Development

Note

3) Fill in the blanks to make the sentence meaningfull.

   a. In teaching, learning is concerned with the skills which come under .... domain.

   b. In teaching, attitude, appreciation and values come under .... domain.

   c. In teaching, physical education teacher is concerned with the knowledge accumulation which is related to .... domain.

   d. "Rewards" is the example of .... motivation.

   e. Pleasure is the example of .... motivation.

   f. Lack of motivation means ....

ACTIVITY 6.1

Write briefly about the personality of your role model from the field of sports.

6.3 PSYCHOLOGICAL FACTORS AFFECTING PERFORMANCE

The sports psychology is defined as the scientific study of people and their behaviour in the sport and application of that knowledge in the real-life situation. The study of sports psychology is concerned with the effect of psychological factors on participation and performance in the sports and physical activity. For example-

- The individuals, who have a high confidence level, can participate in the activity and perform well.
- The individuals who are having higher anxiety may find decline in their performance.
- The individuals who are using Goal setting techniques can perform better in sports.

Sports psychology is also explained as the effect of participating and performing in sports and physical activity on the psychological factors. For example-

- The individuals who are regularly participating in sports enhance their self-confidence.

- Physical activity can improve the self-confidence in the child.
- Participation in sports activity can enhance the personality development.
- Regular participation in sports can reduce anxiety.

In short it can be said that psychology and sports are interrelated. Sports psychology can help athletes to enhance their physical performance as well as psychological performance through participation. The following factors contribute the most in performance and the detailed explanations of psychological factors are presented here.

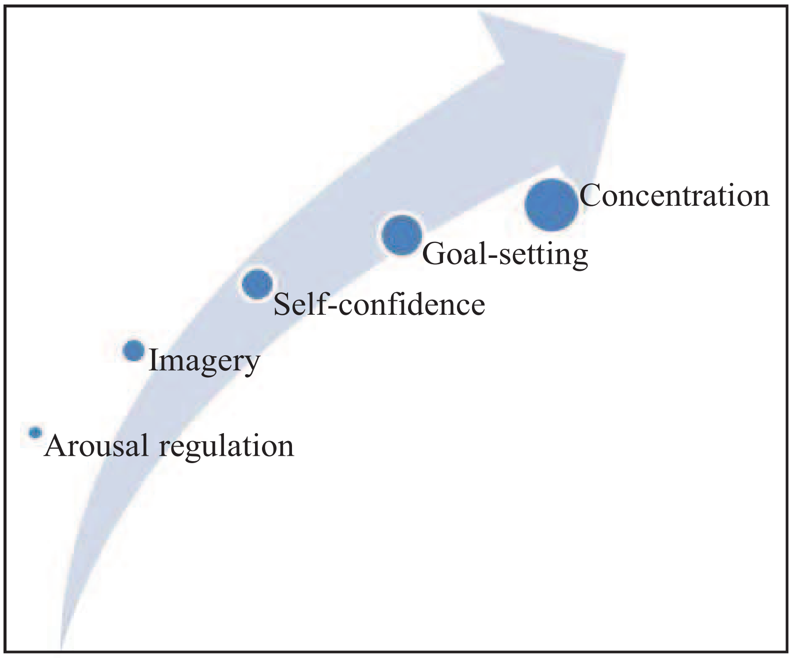


Figure 6.3: Factors that contribute to performance

Arousal regulation

Arousal is a combination of physiological and psychological characteristics in a person, and it refers to the intensity dimensions of motivation at a particular moment. An individual becomes mentally and physically activated. Intensity of arousal falls along a continuum ranging from not at all aroused (i.e. comatose) to completely aroused.

Arousal has a direct relationship with physical performance. The two theories can be considered with respect to relationship of arousal with performance. The inverted U-theory and drive theory. Drive theory represents the linear relationship between arousal and performance, which means that if the individual has low arousal, the performance will be lower, and the player is not psyched up. As arousal increases, performance increases as per the drive theory whereas Inverted U theory shows that arousal and performance relationship will be the same as drive theory up to optimal level where best performance occurs. After that further

Note

improvement in arousal can cause deterioration in the performance. This way represents the inverted U theory that reflects high performance with the optimal level of arousal, and lesser performance with low or very high arousal. Inverted U-theory proposes a curvilinear relationship.

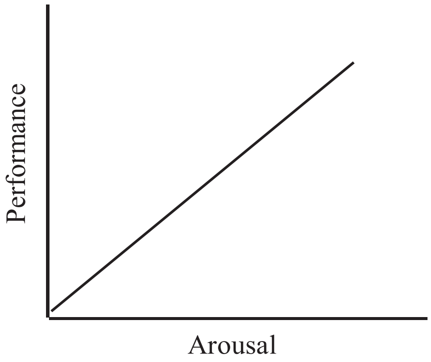


Figure 6.4

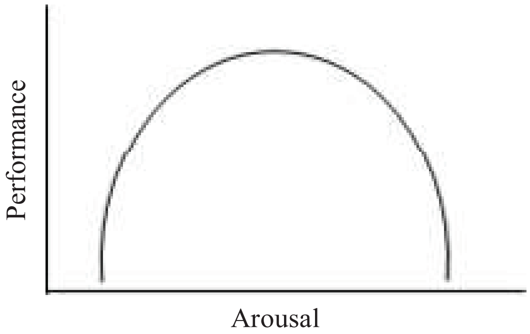
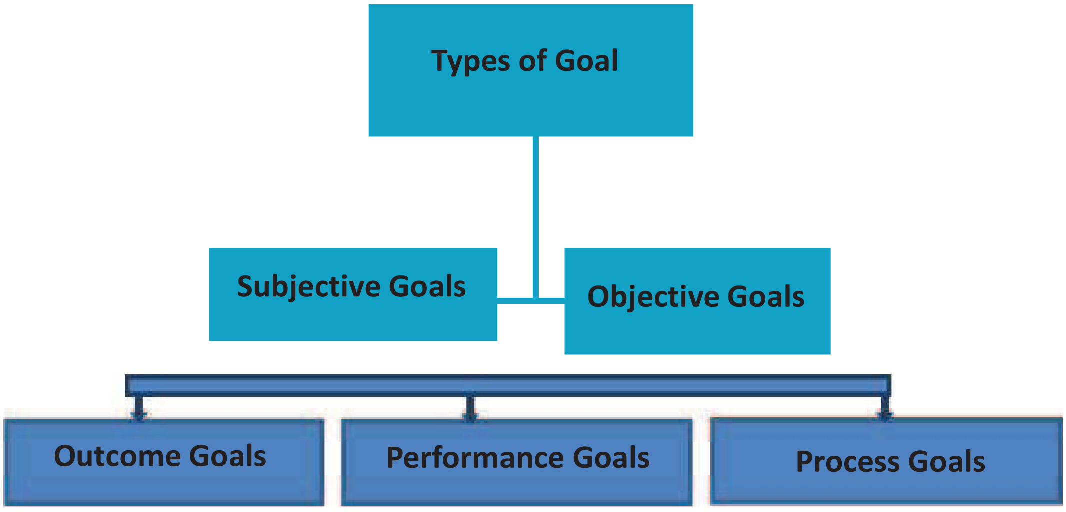


Figure 6.5

Goal Setting

Goal setting is one of the psychological factors that have been found to be the most effective performance enhancement techniques in sport psychology. Goal setting not only enhances the performance of the sports persons, but also improves the psychological state of an athlete in terms of arousal regulation, confidence and motivation. The very few however are aware of the goal setting. According to Lock and Latham (1985) goal can be defined as the aim or object of something we are trying to obtain. There are many worthwhile goals used in sports. Goals on the basis of their distinct nature can be divided into two broad categories subjective goals and objective goals as presented below.



Subjective Goals- Subjective goals are some general goals that can not be specific. Subjective goals are based on non-quantifiable measures such as "to

Note

perform better" or "to improve", "try very hard", "create and run interesting practices (goal for coach)", "be liked and appreciated", "be happy and have fun". It's a qualitative measure, therefore, are often not used in sport psychology quantitative interventions. Goals can also be categorised as objective goals.

Objective goals are quantified and are based on more quantifiable measures, such as decreasing a 10,000-meter performance, winning a competition, increasing the percentage of first possessions, to decrease the number of throw-in foot errors Objective goals are simpler to evaluate and allow better control by the individual. Objective goals can also be further divided into three different categories namely outcome goals, performance goals, and process goals. These categories of objective goals focus on different aspects of the athlete's performance.

Outcome goals typically focus on achieving a certain result in a competition. Results could be achieved by focusing on outcome goal. Winning the match or to beat a particular opponent are the examples of outcome goals. Whereas, achieving the outcome goal depends on many factors such as opponent preparation, and environment. The next psychological factor is imagery which has been described here.

Achieving individual skills and modification of behaviuor could be achieved by performance goals. In order to improve drop shot on badminton, a certain member of days, to increase strength working out a number of repetition and a set a number of days per week are some examples of performance goals. To achieve a performance, focus is placed on the skills, action and techniques which are process goals. Assuming perfect body position for dividing in the competition or focusing beyond the finish line to ensure focus is retained until the line has been crossed or a gymnast may set a goal of maintaining a long, stretched body hollow position in his back somersaults n floor exercise.

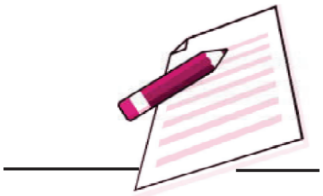
Since a performance is in contact of the athlete performance, process goals, therefore, are the goals which are more effective than these outcome goals.

Imagery

Imagery is a kind of mental practice in which a player has to rehearse the skill in his mind before applying it in reality. Posturizing the perfect skill help them to prepare to execute the skill. In this way an athlete enhances her/his performance. There are various uses of imagery in sports; first we will understand imagery.

Sometimes we use mental practice as a form of imagery. Imagery involves as many senses as possible, out of which five major senses have been discussed here.

The kinesthetic sense – the sensation of bodily position or movement. Sense is the feeling of our body as it moves in different positions.



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Visual sense – visual sense is used to watch the movement. Athletes can watch the videotapes of their movement or opponents' movement.

Auditory sense – auditory sense is used to hear the sound. For example athletes can hear the sound of bat hitting the ball

Tactile sense (touch) - tactile sense is basically used for touch. Athletes focus on how the bat feels in their hands.

Olfactory sense – olfactory sense is used to smell. An athlete can smell the freshly mowed grass.

Athletes Image in Practice and Competition

Imagery can be used in practice and competition to facilitate learning. Player has to focus on practice situations rather than competition for enhancing performance. Therefore, coaches might want to focus more on teaching imagery during practice so that athletes can transfer it over to competition and also practice the correct use of imagery on their own. Athletes can use imagery before, during and after practice; outside of practice (home, school, and work) imagery can also be applied just before the competition.

Athletes use either internal or external imagery; it depends on the athlete and the situation. We will be looking briefly at each types of imagery.

Types of Imagery

Internal imagery means to imagine if you actually executed a particular skill. External imagery refers how you view yourself from the perspective of an outside observer or from a third person's perspective. The athletes watch the other opponent in the match or they use videotapes to see the tournaments. There is a little emphasis on the kinesthetic feel of the movement.

There are numerous benefits of the imagery in sports. With physical performance concentration also improves through imagery, i.e., after missing an easy shot an athlete is able to concentrate ahead. An athlete can focus on a particular skill or task. Imagery can improve self-confidence of an athlete because he imagines the positive aspect of performance i.e. he imagines himself completing a good shot. Apart from this an athlete who is using imagery skill can control his emotional responses. For example, if a player is not motivated up and feels lethargic with arousal, he can reduce his anxiety. He can acquire skills and strategies that help in learning the skills and strategies of sports.

Imagery can be used to cope with pain and injury. The next psychological factor is self-talk that is used as performance enhancement technique in sports.

Note

Self-talk

Self-talk is the communication which we do with ourselves. We talk to ourselves and these inner dialogues are important. What we say to ourselves usually helps to shape and predict how we act and perform. For example if an athlete says to himself that he can perform the particular skill, this statement can him enable make to perform the same skill. When he says, no he can't perform the particular skill then in reality he is not able to perform the same skill. Self-talk is related to motivation. If someone is saying to himself that he is looking good and slimmer than before, in this way he may improve his motivation. Self-talk also helps to deal with distractions. Self-talk can take many forms here; it is categorized in three parts described below.

- **Positive talk** – Positive talk is a motivational task. For example, a player says to himself that he can perform well.
- **Instructional self-talk** – In this kind of self-talk an individual focuses on the technical or task related aspects of the performance execution. For example raise your leg to release the ball for basketball shoot or bend your knees etc.
- **Negative talk** is a critical and self-demeaning. It increases the anxiety of the individual. An individual says that he can never win or she/he can no perform well, are the examples of negative self-talk, which will not enhance the performance or create positive emotions. It creates the self doubts. There are many uses of self-talk like enhancing concentration, increasing confidence, enhancing motivation, regulating arousal levels, improving mental preparation as well as improving skills, acquiring new skills, initiating action, breaking bad habits, sustaining efforts.

Concentration

According to William James – It is taking possession by the mind, in clear and vivid form, of one out of what seem possible objects or trains of thought.

Concentration in sports constitutes of four parts.

- Focusing on relevant environment (selective attention).
- Maintain attentional focus overtime.
- Having awareness of the situation.
- Shifting attentional focus when necessary.

Focusing on relevant environment -The first part of concentration refers to focusing mental efforts on the relevant cues in the environment which is also known as selective attention because one is selecting what cues to attend to what cues to neglect. For example, players concentrate on the basketball, dribbling

Note

the ball, looking up at the basket and focusing on the rim, and ignore the irrelevant cues such as focusing on the opponents lined up for the rebound and the spectators making a lot of noise.

Maintain attentional focus overtime - After focusing on relevant cues the second part involves maintaining the attentional focus overtime in competition. When environment is changing rapidly, attentional focus must also be changed rapidly. Thinking of past or future may give rise to irrelevant cues that often reduce performance. A player has to save himself from the irrelevant cues. For example, players should not be the affected by spectators making noise, missing easy shots, opponent tactics, and last minutes of match.

Situation awareness – Most important aspect of attentional focus in sports is athletes' awareness regarding their environment, i.e, what is going on around him. He must be aware of match situation, and his/her opponents. Players take appropriate decision in the match which is based on environment awareness.

Shifting attentional focus when necessary – During an event a player has to shift his attention from one aspect to other aspect which is known as attentional flexibility. The attentional focus can be grouped in four categories.

1) *Broad external environment* - a player focuses on a wide range of the external environment, i.e scanning of the width of the field, assessing the situation on field
2) *Broad internal environment* – a player focuses on past events to adjust in new situations or to different player's needs. He may use mental rehearsal to achieve this awareness.
3) *Narrow external focus* – a player concentrates on some of the external cues like rim in a basketball shooting, hurdles in high jump.
4) *Narrow internal focus* - a player focuses on one thing for example, a thought or idea. A player becomes aware of himself or his own tension levels.

INTEXT QUESTIONS 6.3

Fill in the blanks to make the sentences meaningful.

1) Kinesthetic sense is used to feel .... movement.
2) Self talk involves three forms: positive, negative and ....
3) In goal setting there are three types of goals: process, outcome and ....
4) Reframe types of imagery.

Note

6.4 EMOTIONAL AND PSYCHOLOGICAL IMPACT OF YOG

Yog is one of the physical activities which transforms a person in body and mind. Yog and meditation improve the physical and mental health. It changes your posture and slows down the breath. Yog and meditation also influence the psychological factors as well as emotional factors. Let's read all the emotional and psychological impact of yog.

- People who practice Meditation demonstrate the ability to solve problems and acquire and recall information better.
- They are less distracted by their thoughts, which can hamper their performance.
- They are mentally fit.
- Yog can makes us happy
- It improves concentration
- It improves eye and hand coordination and reaction time
- It improves memory, and even IQ scores
- It relaxes you by releasing tension in the muscles and mind
- It helps you in better sleep.
- It increases peace of mind. It slows down the mental loops of frustration, regret, anger, fear, and desire that can cause stress.
- Yog can increase your self-esteem
- It gives you inner strength
- It can help you serve others
- It can encourage self-care
- It helps to relieve the stress
- It works as an intervention for depression, stress and other mental disorders

INTEXT QUESTIONS 6.4

1. Explain any four psychological and emotional benefits of yog.
2. Fill in the blanks to make the sentence meaningful.

   i) Yog is one of the .... activities.

ii) Yog works as an Intervention for .... disorders.

Note

WHAT YOU HAVE LEARNT

- Different changes occur in us during the adolescence period with respect to physical, cognitive, social and emotional aspects.
- Personality has four dimensions namely physical, cognitive, social and emotional.
- Participation in physical activity enhances personality. Children may be encouraged to participate in physical activities.
- Learning takes places in three stages namely cognitive stage, motor stage and autonomous stage.
- A force helps us to act or behave in a particular manner and motivation.
- Performance of an athlete is affected by many factors such as arousal, regulation, goal setting and self-talk.
- Attention focus is grouped in four categories namely broad external and internal focus.

TERMINAL QUESTIONS

1) Highlight the characteristics of an adolescent.
2) Explain the concept of personality and personality development.
3) Explain the concept of learning.
4) Explain the concept of motivation.
5) How do psychological factors affect players performance? explain

ANSWER TO INTEXT QUESTIONS

6.1

1. a) ii) b) iii) c) iv) d) i)

   2) 13 years to 19 years

   3) Adulthood

Note

6.2

1) d
2) d
3) a) psychomotor
   b) affective,
   c) cognitive,
   d) extrinsic motivation,
   e) intrinsic motivation,
   f) amotivation,

6.3

1) Bodily
2) Instruction
3) Performance
4) Internal and external imagery.

6.4

1) Improves Concentration, Reduces Stress, Improve Memory and Cure Certain illness.
2) Physical
3) Mental

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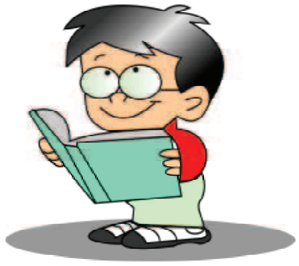
7

SOCIAL ASPECTS

Anju was a good wrestler from her school days; she used to come to school from a remote village. Some of the aged persons of the village were not very happy to know that girls are participating in combative sports like wrestling. Even they used to advise her father not to allow her for sports, but he wanted his daughter to be an international level athlete, so he did not listen to them and wanted her to pursue sports despite of all odds. Therefore, he tried extend every possible facility to her and supported her training continuously along with her studies. Now after ten years of training she has been selected for national Championship and won a medal to make her village proud.

This has made many of the girls of her village to look towards opting for combat sports and village seniors have become more positive towards womens participation. In this lesson, you will read about the concept of socialization through sports, and how national integrity, social reforms and world peace can be promoted through sports participation.

OBJECTIVES



After studying this lesson you will be able to:

- explain the process of social development through sports;
- highlight the social impact of yog;
- explain the system of national integration through yog and sports and
- indicate social impact of yog.

7.1 SOCIAL DEVELOPMENT IN SPORTS

Physical education is a lifelong learning impacting education. It facilitates multifaceted learning process. It promotes social and cultural interactions in participants. Engagement in exercises, sports and physical activities promotes social acceptance. Physical education activities' participation provides opportunities to learn the ways of healthy living, taking care of one's own health,

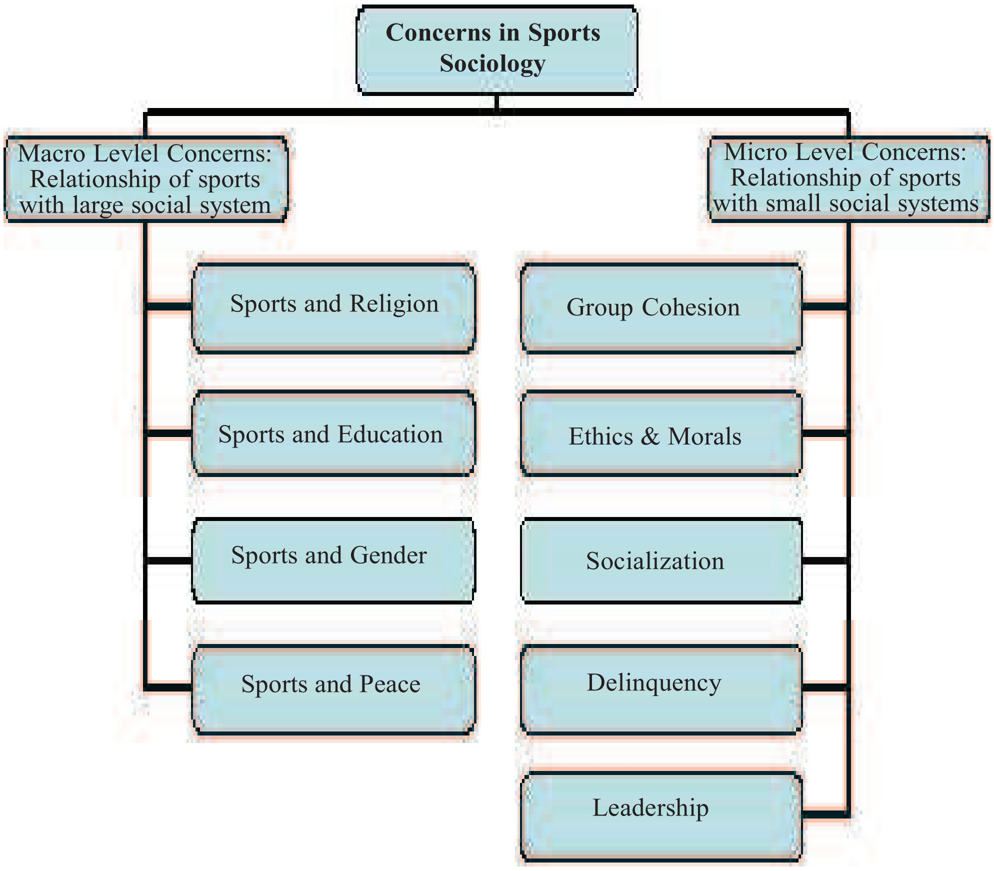
Note

caring and sharing. The learner learns how to express her/his joy and accept defeat, health related fitness, physical culture, goal setting virtues of right and wrong.

Come let us learn the concerns in social aspect of sport in two perspectives:

- **Macro Level Concern:** The study of large-scale social systems and their relations with sports include association of sports with large social system of religion, education, gender and peace.
- **Micro Level Concern:** The study of social relationship and small social systems of group cohesion, ethics and morals, socialization, Delinquency, Leadership with sports.

Both macro and micro level concerns are presented diagrammatically below:



Learn Socialization through Sports

Socialization through sport is equally targeting the child and the group, and is taking place when the individual acquires attitudes, values, concepts or types of behaviour specific to the group or sport community, for the purpose of his adaptation and integration. The process of socialization allows the learner to acquire customs, attitudes, values and behaviour as desired by the society.

Note

The complex process of socialization is an experience not only in the playfield but also while participating in the physical activity and sports in schools, neighbourhood, home and other locations. physical activity and sports from agencies such as school, home and social institutions. We can generally regard sports for playing a significant role in socialization.

ACTIVITY 7.1

Enlist the name of movies which reflect the life of athletes and promotion of sports

Social psychology and related sciences include terms as: learning of social skills, interactive and communication skills, personal preferences, group belongingness, membership affiliation, group dynamics and structure, leadership, control, imitation, role, status, integration, compliance, ritual etc. Yes, these terms are interesting and easy to be experienced in sports and modification in these behaviour experiences are also visible through sports participation. It is interesting to know that, this belief has promoted international sports meets, festivals, Olympics, Asian Games, National Games and other regional, state and organizational level sports events which consist of participants from different identities to perform, compete and interact on a common platform and promote socialization.

Let's read the rationale of how and why Olympics was started and what does it have for promoting socialization.

Olympics Movement for Social Development:

It is interesting to read how the need for international peace and understanding lead to the foundation of International Olympic Committee and modern Olympics in 1894 at Paris through the efforts of "Baron Pierre de Coubertin". The Olympic movement was not merely for competitions for deciding winners and champions but were described in Olympics charter as cosmopolitan event for creating International Peace, Friendship, Goodwill and Social Integration.

INTEXT QUESTIONS 7.1

1) Highlight the three Olympic Values.

    ....

2) Explain the importance of interaction for social development.

    ....

Note

3) Explain the relation between sports and large social system.

....

5) Explain the relationship between sports and small social system.

....

7.2 SOCIAL DESCRIPTION OF SPORTS

Come, let us try to see sports from the social eyes, the institutions of sports believes sports as the great 'melting pot', a vehicle for providing equal opportunity for participants of all races and nationalities, it reduces gender bias, improves group cohesion among the small group of athletes or the entire team, create leadership. The sports reflect what we believe about our society.

Group Cohesion through Sports

A Group which is a collection of two or more people for a common goal cannot be better understood other than sports where players join, work and stay together as a team for individual skills, co-active skills or interactive skills with defined objectives. The sum of all the factors causing members of a group to stay in the group or be attracted to the group are Group Cohesion and sports provide enough reasons to keep people connected throughout with motivation and zeal. Therefore, sports are also known as 'Social Glue' that binds people together.

Leadership is defined as a behavioural process that brings the potential in the individual or group to set goals, leadership in sports can be individual or team sport. In an individual sport the person leads himself setting his own goal. In the team sport the leader has to accommodate the variety of individual style. In physical education all are nurtured to be leader.

Sports Leadership Qualities

- Set high standards
- Assume responsibility
- Demonstrate management skills
- Encourage fair play
- Team player
- Honesty
- Intelligence
- Communicator and listener
- Good motivator

Note

Spectators

If we don't play any sports, can we still consume sports and get the benefits of sports or influence sports? Yes, many times we don't play, but still view the sports at the stadiums or on televisions as spectators, the consumers of sports. We can observe that the sports across the world are gaining popularity, ties with corporates and business institutions are increasing; stadium seatings are high priced; television channels have introduced pay- per – view for particular sports. All of these have lead to identify spectators as of four types: Supporters, Fans, Followers, Flaneurs, (Giulianotti, 2002).

Factors underpinning the success of sports as a vehicle for social change

1) Friendship groups are involved and they want to establish the relationship due to the importance given to participants.
2) It provides the reassurance that participants who are participating are just like us.
3) It helps to acknowledge the older people that some activity is better than being inactive in life.
4) Intrinsic value which are enjoyment, recreation and change of form are more appealing in any physical activity.

INTEXT QUESTIONS 7.2

Match the statement given under column 'A' with the words given under column 'B' in a maningful way.

	Column A		Column B
1)	Collection of two or more people for a common goal	a)	Leadership
2)	Qualities of management skill, team player, motivator	b)	Group Cohesion
3)	Sports is a vehicle for	c)	Spectators
4)	Consumers who go to view sports at the arena	d)	Social Change
5)	Members of a team staying in the group or being attracted to the group is reflection of	e.	Group

7.3 DEVELOP NATIONAL INTEGRATION THROUGH SPORTS

Come, let us learn about national integration through sports. From sports, we learn sportsmen spirit and that acts as a lubricant in our social life. More than

Note

winning, sports help us learn to deal with defects, it makes us to become a leader. Development of national integration, sports competition, intramural, community sports programmes in schools play an important role. The spirit of brotherhood and friendship is fostered through games and sports, ideas, actions, reactions, behaviours and human movements acquire a unity of colour and flavour at the sports field. Physical education and sports develop the basic components of integration such as co-operation, attitude, sympathy, friendliness, fellow feeling, willingness, respect to others, co-ordination, motivation, tolerance, trust-worthiness, integrity, oneness, and identification.

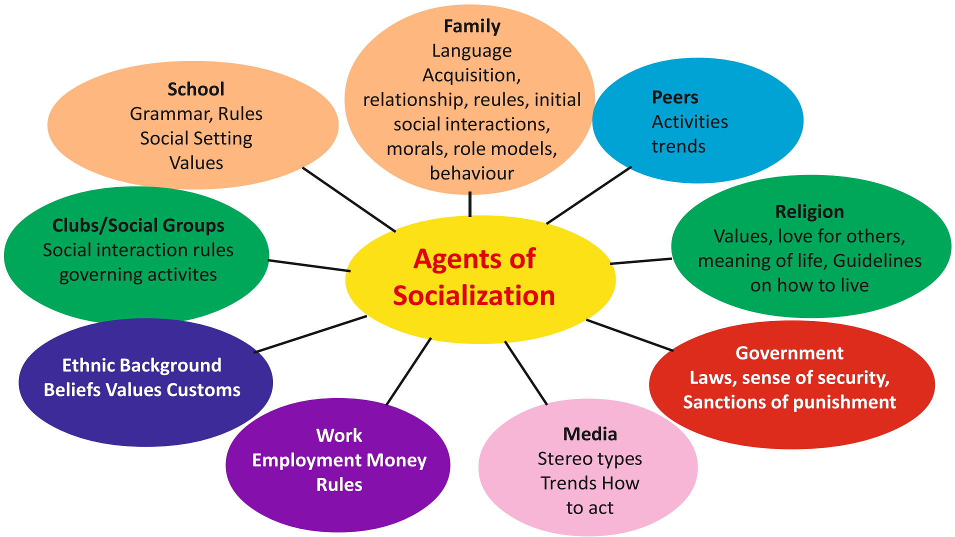
INTEXT QUESTIONS 7.3

Mark the following statements as true or false. (T & F).

1) Sports can be a vehicle for national integrity ( )
2) Winning is the sole motto of sports ( )
3) The spirit of brotherhood and friendship is fostered through games and sports ( )
4) Participation in sports has a social value ( )
5) Respect and tolerance can be learned from sports ( )

ACTIVITY 7.2

From the below given chart for 'Agents of Socialization', identify which all socialization agents are influential in sports too. Tick mark your choices.



Note

7.4 DESCRIBE SOCIAL IMPACT OF YOG

As we all know that yog has a positive impact on every aspect of one's life which be mental, physical, emotional and spiritual. It helps human being to find out the depths of energy and creativity for living, and to more meaningful life. Yog practice makes us calm and collected and it helps to come up effectively in strains and stresses of life.

Yog helps in promoting holistic wellness and social wellbeing. It not only prevents and cures the innumerable diseases we face in this modern living, such as alcoholism, smoking and drug addiction which have developed in recent society culture. Yog helps in transforming oneself and also the society, nation and ultimately the whole human race. Yog is now playing a major role in integration of all the religions of the world.

WHAT YOU HAVE LEARNT

- The elements of Social Development in sports and the social aspects of sports.
- Social interaction through sport teaches us to: associate with our friends, solve and prevent conflicts, communicate and socialize better with our colleagues
- The benefits of sports for development of social skills that are helpful throughout our lives.
- How Olympic movement is benefiting in development of social aspects among the countries, by providing equal opportunity for participants of all races and nationalities.
- Development of National Integration through sports.

TERMINAL QUESTIONS

1) Highlight the different concerns of sports sociology.
2) Explain the elements of Olympics.
3) Why do we play and participate in sports?
4) Can sports promote peace and harmony?
5) Does sports teach group cohesion and leadership? Explain
6) Describe social benefits of Yog.

ANSWERS TO INTEXT QUESTIONS

7.1

1) Respect, Excellence, Friendship
2) Socialization
3) Macro Level Concern
4) Micro Level Concern

7.2

1) e
2) a
3) d
4) c
5) b

7.3

1) T
2) F
3) T
4) T
5) T

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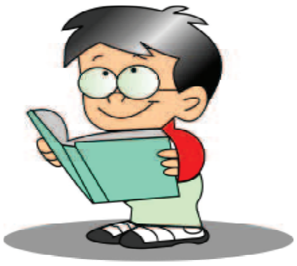
8

SPIRITUAL ASPECTS

We have discussed about physical, psychological and social dimension of physical education and Yog in last few lessons. In this lesson we will come to know about spiritual component of physical education and Yog. Spirituality is the basic and subtle dimension of personality as is a root for the tree. When spiritual awareness grows, thoughts, concepts and values also change. So in this lesson we are going to study the concept of spirituality and how to transform this in our life. Mantra chanting is very ancient technique to maintain inner strength and tranquillity. So Raj Yog and Mantra vibration will also be the focussed in this lesson. We are also going to discuss how one can develop inner awareness and its importance. Without spiritual aspect life is incomplete and it is yogic philosophy which first purifies body discipline, mind and growing in spiritual life. The concept of Ashtang Yog or Raj Yog is very practical for Poorn swasthya (complete health). At last we will also know about the concept of meditation.

OBJECTIVES



After studying this lesson you will be able to:

- explain the spirituality;
- understand the inner awareness & develop inner awareness of life;
- learn the impact of Mantra chanting;
- explain the philosophy of Ashtang Yog & eight steps of Ashtang Yog and
- know the concept of Meditation & learn a few meditative techniques.

8.1 SPIRITUALITY

The definition of Spirituality as per oxford dictionary is 'the quality of being connected with the human spirit or soul as opposed to material and physical things'. One cannot equate spirituality with self-realization, or Moksha (salvation). The moment one negates the negativity and associates with positivity one becomes spiritual. The moment you stop perceiving yourself as an individual unit and begin to experience yourself as a part of greater system, you become

more spiritual. Spirituality is connecting with the positive and the creative aspect of life, not self-realization, but becoming good, doing good, softening the sentiments, feelings and thoughts. Spirituality is the antidote to materialism. Yogic philosophy teaches us to make a balance between them to complete human life. If they do not go together hand in hand then there are always conflicts, confusions, destructions and deviations in human life. Swami Sivananda said that if anything which can save humanity, it is spirituality. The influences of the materialistic life can be managed better through spiritual awareness. We start our life to fulfil needs and during achievement of fulfilling the needs we are not aware that when this need becomes greed. Greed leads to manipulation. Manipulation leads to altering the natural law of nature and human beings. With spiritual awareness, the greed is observed and it is converted into a positive need. Spiritual life leads you to contentment while materialistic life leads you to greed.

INTEXT QUESTIONS 8.1

Fill in the blanks with appropriate word:

1. The quality of being connected with the human spirit or soul as opposed to material and physical things is called ....
2. Spiritual life leads you to .... while material life leads you to greed.

8.2 INNER AWARENESS (A PRACTICAL APPROACH TO SPIRITUALITY)

The practical way to become spiritual is not by thinking of God, going to church, going to temple or to do Namaz but by connecting with inner self which is pure and positive. Spirituality is closer to one's own spirit. The word 'Adhyatm' is Adhyan + Atma. The components of inner awareness are inner or self-analysis, to develop human qualities and at last to experience presence of God, grace of God in life. Yoga practices are not only for physical fitness but also to reduce stress, anxiety, high blood pressure, high blood sugar level etc. We have to refocus on our energies, intention and commitment to the cultivation of spiritual awareness and the development of the spiritual qualities within ourselves. In this refocusing first we should cultivate three attributes:

i. We have to be sincere

ii. We have to be serious and

iii. We have to be committed.

These are the qualities that allow the individual to grow in spiritual life.

Note

Inner awareness is the most important aspect to be developed in these days. In this modern life style most of the time we remain under external inputs by different gadgets. Our thoughts, actions, behaviours and the whole life are under external influences. To develop a balance between inner self and outer world we have to adopt yogic teachings. Inner awareness is the outcome of the yogic practices if practiced sincerely & seriously. It is a subtle experience and influences through subtle body - Vigyanmaya kosha (intellectual body) and Anandmaya kosha (body of bliss). If one is able to become aware of oneself in the body that is called meditation. Meditation is not necessarily concentration on God, but it is realization of the inner dimension of one's own personality. We have much more to know within our body. The individual awareness is potentially cosmic. Dhyan, Zen, meditation, total attention, total awareness; all are the same things. Therefore, it is very important that everybody should devote ten minutes of each day to discover his inner self.

8.3 MANTRA CHANTING

A mantra is a sacred word, sound or phrase, which is believed to have a spiritual and psychological power. Mantra is often used in meditation as a way to harness and focus the mind. The word mantra consists of two roots ***'Man'*** and ***'Tra'*** where '*Man*' means profound meditation and '*Tra'* means releasing. In Hansha Upnishad mantra is defined as '*Mannaat Trayete iti Mantra*' which means "by contemplating upon which, the mind is freed from obsession."

Chanting is a process of repeating mantras, special vibratory sounds to heal one's inner being, to rejuvenate, to purify and to transform every aspect of life including mental, emotional, spiritual and physical bodies.

Mantra is not merely a holy name or a divine sound. It is the basis of yoga and spiritual life. Mantras are Vedic in origin. The teachings of the Vedas consist of various Mantric chants or hymns cognized by different seers from the cosmic mind. Mantras are used in many religions and schools of thought, including Hinduism, Jainism, Buddhism, Sikhism, and Christianity. The use, structure, function, importance and types of mantras vary according to the school and philosophy of Hinduism and Buddhism. Mantras come in many forms and are typically melodic, mathematically structured meters, believed to be resonant with numinous qualities. As its simplest, the word P (Aum, Om) serves as a mantra. In other words, mantras are melodic phrases with spiritual interpretations such as a human longing for truth, reality, light, immortality, peace, love, knowledge and action.

8.3.1 Impact of Mantra Chanting

Different sounds have different effects on human psyche. If a soft sound of wind rustling through leaves soothes our nerves, the musical note of running stream enchants our heart, thunders may cause awe and fear, so like the Mantra which is also a sound, a vibration which alter the frequency of brain emotion and mind. So mantra is to free the mind. Once the mind is freed, other problems are automatically resolved because the greatest problem is the mind itself. The mind is restless and constantly occupied with many thoughts. Mantra gives the mind peace and guides our thoughts.

Mantra works differently on different kinds of personality and the result will be different. The emotional personality when performing the mantra and concentrating on their Estha Devta then mantra take the form of Bhakti and connect the Bhakta with Estha Devta. The mantra when practiced by intellectual type of personality it will lead that kind of personality on the path of Gyana by analyzing, by knowing, by realizing different transformation the Sadhak goes through. Mantra becomes part of Gyan yoga the journey from gross to subtle. For a psychic personality the effect of mantra is to harmonize inner vibrations, and the movements of Pran shakti and chakra and for the dynamic kind of personality mantra will provide you with an inner conviction, strength, stamina, clarity of mind, purity and feeling so that the energy and blocks transcendent, and one can live ordinary life with divine awareness. Mantra japa can give contentment and can influence ones character and personality.

Mantra vibration can influence the brain, body, subconscious and unconscious realms.

There are different kinds of mantras. Individual Mantra given by guru as initiation is '*Guru Mantra*'. Other type is general mantra like the '*Mahamirtunjaya*', '*Gaayatri*', etc. which everybody can chant i.e. these are common mantras.

INTEXT QUESTIONS 8.2

Marke the following as True/Flase:

a. Inner awareness is a subtle experience and influences through subtle body - Vigyanmaya kosha (intellectual body) and Anandmaya kosha (body of bliss). (True/False)

b. Mantra vibration can influence the brain, body, subconscious and unconscious realms. (True/False)

Note

8.4 PHILOSOPHY OF ASHTANG YOG

The first yogic text 'Yog sutra' is written by Maharishi Patanjali. Yoga Sutra were written to explain the process and practical methods of raising levels of awareness, gaining deeper wisdom, exploring the potential of the mind and eventually going beyond the mind. This system of yoga progressively attempts to transcend the outer environment of the physical body, and directs the awareness of the inner awareness. Ashtanga yog or Patanjali yog is identified by Maharishi Patanjali. It is the path of yoga in which we attempt to explore our consciousness. Specifically, Patanjali Yoga system consists of eight steps or limbs on which the aspirant must progressively master on the path of self-realization; they are - Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana and Samadhi. Hence, this is called Ashtanga yoga (the yoga of eight stages). Raj Yoga (including Patanjali yoga or Ashtang yoga) is the science of the mind. It is the science of mental discipline and includes various methods of making the mind one pointed.

8.4.1 Importance of Patanjali yog in context of Swasthya

The world health organization defines swasthya (health) as "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity".

The spiritual movement starts from the gross to the more subtle. Now it is very clear that we can attain a state of social, physical, mental and spiritual well-being. Yama and Niyama are for social well-being, asana and pranayama are for physical well-being, pranayama, pratyahara and dharana are for mental well-being, dhyana and Samadhi are for the spiritual state of well-being.

According to the yogic concept and Indian concept the word Swasthya means— Swa (self) & asthya (established). So we can say health is a self-established state. Now we have to understand 'self'. Yoga believes five levels of bodies. These five bodies are called Panch Kosha, which all together represents whole being or self.

Panch kosha are mentioned as below-

1. Annamaya Kosha - Physical body
2. Manomaya Kosha - Mental body
3. Pranamaya Kosha - Pranic body (the dimension of energy)
4. Vijnanamaya Kosha - Intuitive body
5. Anandmaya Kosha - The body of bliss

We can see that health or Swasthya is a very subtle thing; to maintain a healthy state of being we need to perform some techniques which can influence these subtle bodies. In ancient Indian teaching it is ones moral duty to maintain Swasthya. Yoga provides us opportunity to influence all five bodies and to be aware about it. We should know about holistic health and motivate people to adopt yogic technique in their life style.

8.4.2 Eight Steps of Ashtang Yog & Spiritual Nourishment

Patanjali yog provides us a wide range of techniques that slowly harmonised the mind and develop more subtle awareness. However, the main path of Patanjali is combined within eight fundamental stages. The first four stages are the Bahiranga (external) practice of yoga and the last four stages are Antarang (internal) practices of yoga. This scripture is also called Yoga Darshan – a method of attaining higher perception; it means 'to see the invisible things' or 'to see with spiritual insight'.

Let us briefly discuss each steps of Patanjali Yoga:

1. Yama (social code)
2. Niyama (personal code)
3. Asana (posture)
4. Pranayama (control of prana)
5. Pratyahara (sense withdrawal)
6. Dharna (concentration)
7. Dhyana (meditation)
8. Samadhi (super consciousness)

Yam a- The first aspect of Ashtang Yoga is known as Yama. Social code means yogic self-control. The five yamas are – Satya, Ahimsa, Asteya, Aparigraha and Brahmcharya. These are described as follow:

- **Satya** (truthfulness): It refers to awareness of what is correct, right and true, as it is manifesting from within, and the ability to express it. In higher level it is complete control over speech.
- **Ahinsa** (non-violence): It is not an external act of eliminating violence from our action but elimination of violence from our attitude.
- **Asteya** (non-stealing): It means that one must not steal, nor have the intent to steal another's property through action, speech and thoughts.

Note

- **Aprigraha** (non-possessiveness): It means that we should not collect things without requirement. It also means non attachment.

- **Brahmacharya** (celibacy): It is a form of self-restraint regarded as a virtue, and an observance recommended depending on an individual's context. Self-control in all things is the direction of true growth.

Niyam- It literally means positive duties or observances. These are also five in number. According to yog sutra these are fixed discipline necessary for the practice of meditation and Samadhi. These are described as follow:

- **Shaucha** (cleanliness, purity): It is the first Niyam. It refers to purity of mind, speech and body. It does not mean only physical cleanliness but also environmental cleanliness and cleanliness of one's living area.

- **Santosha** (contentment): It means to be happy with present moment without craving and without complaining. A sense of satisfaction in spiritual life is a necessity.

- **Tapas** (austerity): It means following a process of change and transformation for the better. It is also defined as seeking out the pure essence of matter. According to yog sutra, it involves subjecting the body to hardship so that it can endure heat, cold, poison and so on.

- **Swadhyaya** (self-observation/ introspection): It means the self-study and recitation of the Vedas and other sacred books/ scriptures.

- **Ishwara Pranidhana** or cultivation of faith or to believe in higher reality.

Asana- This is the third aspect of Ashtang Yog. According to Maharishi Patanjali Asana is "***Sthirasukhamasanam***". It means steady and comfortable posture is known as Asan.

Through the practice of asanas, we develop the habit of discipline and the ability to concentrate, both of which are necessary for meditation. We will learn more about Asanas in the lesson Yogasana.

Pranayama- The word Pranayama means 'extension or expansion 'of the dimension of prana. We will learn more about it in the lesson Pranayama.

Pratyahara- It is generally translated as 'withdrawal of senses' because at this stage we withdraw our mind from the external sensory objects and internalize. Dissociation of the mind from the sensory field is not a negative state, it is a very beautiful experience. **Practices of *Pratyahara*-** Ajapa-japa, Yoga nidra, Trataka, Antar mouna.

Note

Dharna- It means to hold or bind the mind at one point. It follows the state of *Pratyahara*, so that by internalizing the awareness the senses ultimately follow the mind. ***Dharana* practices** are- Chidakash *Dharana*, *Hridayakash Dharana*.

Dhyan- It merely an extension of *Dharana*. It arises when one is able to maintain a smooth, unfluctuating flow of concentration towards the inner symbol for a period of time.

Samadhi- This is the state where there is complete absence of both external and internal mental modifications; all that remains is awareness. Samadhi brings self- realization.

Learners as we have discussed about concept of spirituality, we are very convinced that Asthang yog is a complete package for spiritual nourishment. Yama and Niyam are to develop human quality, to be sensitive and sincere about self and surrounding. Pranayama and Pratyahara are for mental tranquillity, to develop positivity and to develop inner awareness. Dharna and Dhyan to direct attention and awareness towards discovering your inner nature, and that is where we find peace. Inner peace, satisfaction and pleasure are ultimate of spirituality.

8.5 CONCEPT OF MEDITATION

Meditation is a process of total perception, total consciousness and unconditional awareness by which we are trying to come closer to our higher self. When we are able to transcend the world of senses and when we are able to transcend the world of experiences for a short period that is called meditation. It is a state when we are able to transcend the memories of the past, the anticipation of future and the anxieties of the present, when we are able to forget for the time being; our name and form, our placement, our position, our environment. When we able to become aware of something inside ourself that is called meditation. In the practice of meditation practitioner tries to acquire complete knowledge of his mind and at the same time to acquire a system of training and regulating the infinite capacities and potential of the mind.

Dhyan yog or meditative practice of yog is not like that you close your eyes and enter into a state of total darkness and unconsciousness. Dhyan means an expanded state of mind, awakening of one's full creative potential. Meditative state does not mean switch off your mind but it is a dynamic state of awareness. With meditation or Dhyan yog we start a new chapter in our life. Once we are involve in Dhyan yog or meditative practice in the correct way our experiences and our personality will become steady and lasting. Our attitude toward life will be fantastic.

Note

Meditation is related to the evolution of human consciousness.

The sole objective for human being should be to evolve spiritually. To evolve spiritually means to be able to understand what lies within us beyond the body, beyond the senses, beyond the mind and beyond the ordinary understanding. This is the process of expansion of consciousness. This external existence and this external experience are not the ultimate one. There is something beyond it. There are layers and layers of experiences that can be experience through the process of meditation.

Meditation should be balanced with karma yoga and bhakti yoga, we have to work on karma and samskara.

8.5.1 Some Meditative Techniques

In Ashtang Yog philosophy Dharna, Dhyan and Samadhi are called antarang yog.

Pratyahara is gateway to antarang yog, it is withdraw from external senses. It is the practice which prepare for meditation. Pratyahara practices train our mind for meditation.

Dharna means internal concentration of mind. It is the step before meditation and is concerned with fixing awareness on one object. In the very beginging it not possible. By experience one can realize how difficult it is to maintain awareness of one object without any thought intervention. The mind is full of inner chatter in the form of memories of the past and projection of the future. Various methods can be used to induce mental one- pointedness. Religions in general try to induce it through rituals, pooja or worship, chanting, prayer and so forth. Yoga utilizes a psychic symbol (Prateek) as a focal point for Dharna.

These days' common meditative practices are Pratyahara and Dharna.

Pratyahara Practices may be done with Yog Nidra and Antar Mouna.

Yoga Nidra- Yoga Nidra means sleep with trace of awareness. It is a state before sleep and during the practice awareness remains in sub conscious level .It is an art of relaxation and more efficient and effective form of psychic and physiological rest. Through the practice of yog nidra threefold tensions can be released (muscular tension, emotional tension and mental tension). It is not a concentration practice, it is a practice of pratyahara stage. Yog nidra is the best yogic technique to manage psychosomatic disease. In the practice of yog nidra we can put on something positive, creative and we can release negative aspect of our personality as phobia, bad habits.

Antar Mouna – It is also a Pratyahara practice. Antar mouna means inner silence, but in this practice we observe all sensory inputs. The most important feature of this practice is to develop attitude of witness (Sakshi Bhav). This witness attitude initially against sensory inputs then thoughts, emotions and at last for life. This practice develop mental and emotional endurance.

Dharna Practices - Chidakash Dharna, Chakra Sudhi, Chakra Dharna

Chakra Dharna- It is a very advance and spiritual practice. Some preparations and proper guidance is required for this practice. In this Dharna practice first, we have to visualize inner body as a space than visualization of different chakras its location colour with Bija mantra and then more subtle.

Dhyan - Ajapa-jap, Vipasana

Ajapa-japa- It is a very traditional meditative practice and considered as a Vedic Sadhana. There are different variations of this practice. The word japa can be define as the continuous repetition of a mantra. Ajapa is the process spontaneous process of mantra repetition. As the concentration becomes more and more focused on the japa, ones whole being starts pulsating with the mantra.

It is said that the Japa comes from the mouth whereas Ajapa comes from the breath and from the heart. There are different psychic passage for this meditation.

INTEXT QUESTIONS 8.3

Fill in the blanks with appropriate word:

1. In Ashtang Yog philosophy Dharna, Dhyan and Samadhi are called ....

2. .... & .... are pratyahara practices.

WHAT YOU HAVE LEARNT

- Spirituality is connecting with the positive and the creative aspect of life, not self-realization, but becoming good, doing good, softening the sentiments, feelings and thoughts. Spirituality is the antidote to materialism.

- Inner awareness is the most important aspect to be developed in these days. In this modern life style most of the time we remain under external inputs by different gadgets. Our thoughts, actions, behaviours and the whole life

are under external influences. To develop a balance between inner self and outer world we have to adopt yogic teachings. Inner awareness is the outcome of the yogic practices if practiced sincerely & seriously.

- Mantra is not merely a holy name or a divine sound. It is the basis of yoga and spiritual life. Mantras are Vedic in origin. The teachings of the Vedas consist of various Mantric chants or hymns cognized by different seers from the cosmic mind. Mantras are used in many religions and schools of thought, including Hinduism, Jainism, Buddhism, Sikhism, and Christianity.

Patanjali Yoga is that system which consists of eight steps or limbs which the aspirant must progressively master on the path of self-realization; They are –

- Yama (social code)
  - Niyama (personal code)
  - Asana (posture)
  - Pranayama (control of prana)
  - Pratyahara (sense withdrawal)
  - Dharna (concentration)
  - Dhyana (meditation)
  - Samadhi (super consciousness)

TERMINAL QUESTIONS

1. What is spirituality? Explain it.
2. Explain how five bodies related to different aspect of personality?
3. Explain how eight stages of Ashtang yog related to Panch Kosha?
4. Describe Antrang yoga.
5. Explain one step of Ashtang yoga.
6. Write down different stages of Yoga Nidra.

Note

ANSWERS TO INTEXT QUESTIONS

8.1

1. Spirituality
2. Contentment

8.2

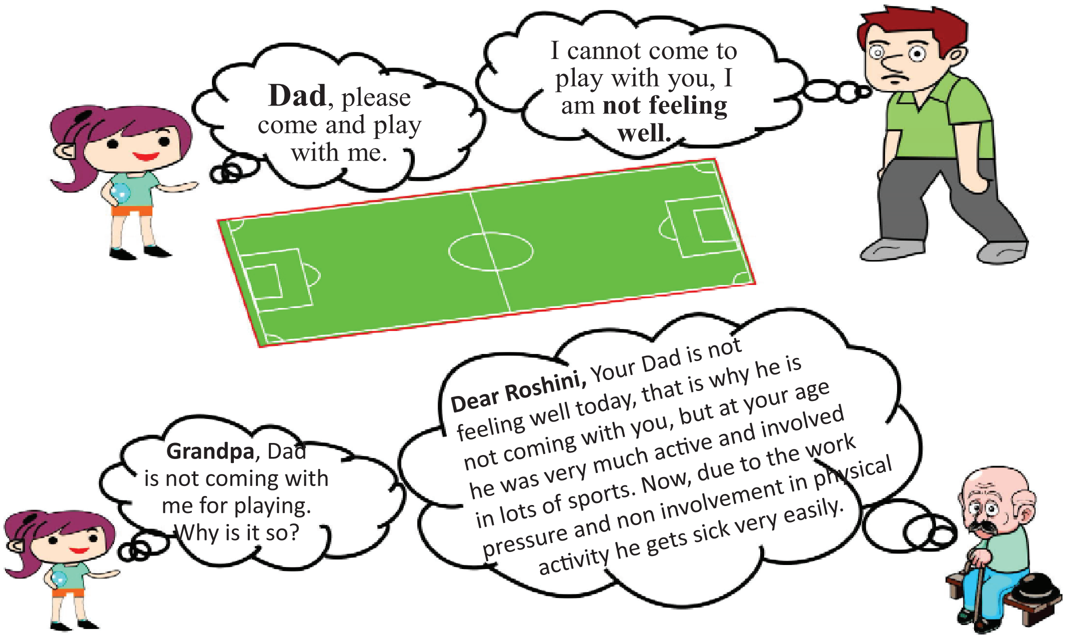
1. True
2. True

8.3

1. Antarang yog
2. Yog nidra and Antarmouna.

9

INTRODUCTION TO HEALTH

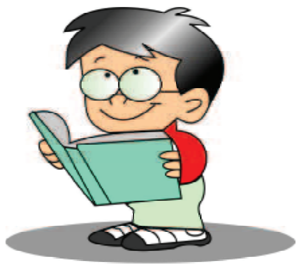


This statement made little Roshini curious to know more about health. She also wondered how things changed over a period of time and what factors were affecting the health of his father. What are the dimensions of health? Roshini wanted to know all this and more. In this lesson you will read about the meaning and concept of health, dimensions of health and factors affecting health.

OBJECTIVES

After studying this lesson you will be able to:

- explain the meaning and concept of health;
- classify the different dimensions of health;
- explain the principles of health;
- examine the factors that affect health and
- explain the yogic concept of health.



Note

It is important to understand the meaning and concept of health. Now we will discuss the meaning of health.

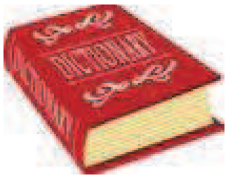
9.1 MEANING AND CONCEPT OF HEALTH

Health is universal in nature but all sects of society have their own concept of health according to their culture. The strength of a nation lies in the health of its people. The future of the people in respect to health relies, to a large extent on what is done by the nation to promote, improve and preserve health of its people.

Happiness in life largely depends upon condition of our health. In the recent times it has been observed that health has emerged as a fundamental human right. Good health is required to satisfy our basic needs and to live a pleasurable life. It is a global goal to facilitate a healthy life to all people.

Earlier it was believed that health is a situation of being ‘hale’. Hale means safe and sound.

If you search meaning of health in dictionary, you will find results such as –



“freedom from disease”

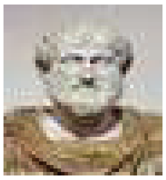
“the state of being free from illness or injury”

“sound body and mind” or

“condition in which function of body and mind are duly discharged”.

In **Ayurveda** health **(Swasthya)** is defined as “a well-balanced metabolism, a happy state of being, the senses and mind”[1].

Swami Vivekanand said “a weak person who has weak body or weak mind can never be a master of a strong soul”[2].



Aristotle has also stated that “a sound mind lives in a sound body”.

Recent researches related with health have been expanding its definition. The concept of health has been extended and now it is not merely presence or absence of disease. It includes the notion of wellbeing which contains biological, sociological, economic, psychological and cultural wellbeing. This wide-ranging concept of health has its origins in the World Health Organization’s (WHO, 1948) definition of health i.e. “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. This definition has been amplified and it has been added, “attainment of a level of

[1]http://ayurvedanextdoor.com/ayurvedic-definition-of-health/

[2]http://www.vedantany.org/sayings-of-swami-vivekananda/

health that will enable every individual to lead a socially and economically productive life". This seems health is difficult to define but easier to understand. The definition of health has changed from time to time. Many of us define it as absence of disease or infirmity and some think of it as sound mind and sound function of the body. Health is not only the absence of illness or deformity, it is the quality of life, where fitness for performing own work and happiness are its distinct marks.

Good health presupposes the existence of sound physical and social environment in which man lives. Health is conducive to learn about happiness, success, productive citizenship and meaningful living.

Thus we can say good health means

- the proper functioning of the physique (physical parts of the body),
- the chemique (chemical reactions inside the body), and
- the psychique (the harmonious functioning of the mind).

> **"Health is a condition where an individual is physically, mentally, socially, emotionally, and spiritually sound, thus it is more than just being disease free or free from any physical deformity".**

You have learnt the concept and meaning of health. Now we are going to study the definitions of health.

Definitions of Health

According to **J.F. Williams**, "Health is the quality of life that enables an individual to live most and serve best".

Webster Collegiate Dictionary defines health as "The state of being sound in body, mind or spirit, especially freedom from physical disease or pain".

According to **D. Oberteuffer**, "Health is the condition of the organism which measures the degree to which its aggregate powers are able to function".

After reading these definitions you can say health is a 'quality of life' where an individual is in a condition of 'being sound' in all aspects of life and able to serve the nation in a better productive way. Health is not only the freeness from the disease or any physical disconformity. It is much more.

DO YOU KNOW?

In the Constitution of India, it has been mentioned that health sector should be looked after by the state governments, not by the central government. Every state will be accountable for "raising the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties".

(Part IV- Directive Principles of State Policy. Ar. 47)

Note

Note

ACTIVITY 9.1

According to the WHO's statistics, in India the life expectancy of male and female in the year 2016 was 67 and 70, respectively. Find out what is today's life expectancy of male and female in India.

Visit the website http://www.who.int/countries/ind/en/ for information.

INTEXT QUESTION 9.1

1) **Choose the correct meaning of the given word.**

   i) **Hale:** (a) Safe and Sound (b) Safe and structured (c) Soundness in body.

   ii) **Metabolism:** (a) Living organism (b) Health status (c) A chemical process that occurs within our body in order to maintain life.

   iii) **Sound Body:** (a) Body with noise (b) Healthy body (c) Strong body.

   iv) **Sound Mind:** (a) Noisy mind (b) Unstable mind (c) Healthy and controlled mind.

2) **Match the following statements of column A with the Person/Body of column B**

Column A **Column B**

Statements	Person/Body	
a) "A sound mind lives in a sound body."	i) World Health Organisation	World Health Organization
b) "A weak person who has a weak mind can never be master of a strong soul."	ii) J.F. Williams	
c) "Health is a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity."	iii) Swami Vivekanand	
d) "Health is a quality of life that enables an individual to live most and serve best."	iv) Aristotle	

Now you may be able to define and explain health. Now we are going to understand the different dimensions of health.

9.2 DIMENSIONS OF HEALTH

Note

Health is a multi-dimensional concept because it is shaped by biological, social, economic, psychological and cultural factors. Although, authorities in the field of health have recognized three closely interwoven dimensions of health i.e. physical, mental and social, however, recently a few more dimensions have been added viz. emotional, spiritual, occupational and educational.

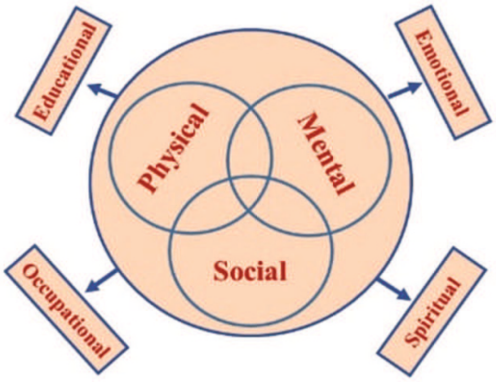


Figure 9.1: Dimensions of Health

Physical Dimension

Physical dimension of health refers to proper and smooth functioning of external and internal features of human body.

- **External:** External features refer to the attractive appearance of the body, whether it is physique, texture & complexion, features, posture, body parts and limbs. It also includes graceful carriage and efficient movement.

- **Internal:** Internal features refer to the optimum functioning of all organic systems of our body i.e. digestive, circulatory, respiratory, nervous and excretory system and sensory organs.

Mental Dimension

Mental dimension of health refers to mental soundness. Often mental dimension of health is linked to or includes emotional dimension of health, but both are different. Mental dimension of health is related to the functioning of the brain, while emotional dimension of health refers to the individual's behavior or mood which is more or less connected to their hormones. Mental health refers to

the individual's ability to use her/his brain and think. This ability enables an individual to face the problems as they arise, take her/his own decision, as well as set reasonable goals.

Social Dimension

Social dimension of health is related to social health. It refers to the ability where an individual is able to make personal adjustment, as well adjustment in the group or society. Sound social health means having a good relationship with family, friends, neighbours, and other members of the society. It also includes maintenance of socially acceptable standard in life. When we have a sound social interaction and relationship with fellow beings, that significantly affects our health.

Emotional Dimension

Emotional dimension refers to emotional health which means emotional balance and fitness. It is the ability of an individual to comprehend and express feelings effectively when required. A person can be called emotionally healthy if his/her emotions are always positive, and has full control over her/his emotions. On the other hand, a person who has no control over her/his emotions or is over powered with negative emotions can be called emotionally imbalanced or emotionally weak.

Spiritual Dimension

Spiritual dimension of health has a root in spirit. The spirit of an individual contributes significantly in recognising and attaining meaning and purpose of life. It is our spirit which plays an important role in genesis of ideas, values, beliefs, and ethics. This dimension plays a significant role because if you are spiritually healthy then you will be able to come with best ideas and you will have good values, beliefes as well as ethics.

Occupational Dimension

Occupational dimension, also known as vocational dimension, is the ability to satisfy our personal needs from our job or business. Our progress depends upon our capacity to earn our livelihood and to meet our economic needs. If we are occupationally satisfied that will provide us emotional stability and mental relaxation. Occupationally satisfied persons also contribute to the nation in increasing production as well as national wealth. Thus, occupational health is of a great national importance as well.

Educational Dimension

Education is a consciously controlled process whereby a positive modification in behaviour occurs in the individual, and through the individual in the group. It causes certain positive changes in individual's behaviour and attitude. The changes enables them to realise their responsibilities to the society and the nation.

Note

ACTIVITY 9.2

How are you feeling today?

Dimension	**How you perceive**		
	Fit	**Confused**	**Unfit**
Physical			
Mental			
Social			
Emotional			
Spiritual			

INTEXT QUESTIONS 9.2

1) **Match the Health Dimensions in Column I with their meaning in Column II**

Dimensions		**Meaning**
a) Physical	i)	Know the meaning of life
b) Mental	ii)	Related with livelihood
c) Social	iii)	Emotional Stability
d) Spiritual	iv)	Relations with society
e) Occupational	v)	Related with body
f) Education	vi)	Related with Intellect
g) Emotional	vii)	Positive modification in behaviour

Note

2) Enlist two more dimensions of health which you think are not listed in the above text.

....

....

After studying the dimensions of health, in the next section we will study the principles of health.

9.3 PRINCIPLES OF HEALTH IN DAY TO DAY LIFE

The key principles of health are balanced and healthy diet, regular exercise, adequate rest, no use of drugs (alcohol, smoking, drugs, eating too much) and positive thinking. Apart from this, a few more principles emerge, which are as follows:

Get Fresh Air

The air we breathe plays an important role in the proper functioning of our body. Continuous exposure to toxic or polluted air causes decay in the health and functioning of the cells and organs of our body. This can lead to increase of exposure to infections and various forms of air borne diseases.

Drink Adequate Amount of Pure Water

Water is critical for the life and functioning of cells, tissues, and organs in our body. Water carries elements of life and has the ability to transmit and maintain them. Our body is made up of about 75% water. Every single cell in our body is made up of water. Nerve function, blood circulation, digestion, elimination of waste, etc., depend on water for their normal and effective functioning.

Eat Nutritious Foods

Our health is literally depending on what we eat. The food we eat plays a significant role in the functioning of our body, health, and wellbeing. What you decide to eat and how you decide to prepare it will impact your health in ways that we have not thought of. A healthy diet consists of the balanced amount of carbohydrates, fats, fibre, minerals, proteins, vitamins and water. We should try to have these nutrients in our food.

Avoid Usage of Tobacco Products and Alcohol

Use of drugs, smoking and alcohol is harmful for our health. Avoid bad habits of drugs use, smoking and use of alcohol. Drugs usage cause many diseases and hamper our health; it usually shortens our life expectancy. For better health and quality of life always say no to usages of drugs, smoking and alcohol.

Note

Get Proper Sleep and Relaxation

Proper sleep and relaxation play a crucial role in individual's physical as well as mental health and functioning. Improper sleep can affect immune system, which can lead to various forms of health problems. Some experts believe that lack of sleep can make the body resistant to insulin, a hormone which helps carry glucose from bloodstream to cells. Other problems resulting from lack of sleep include lack of mental clarity, memory problems, moody disposition, and higher stress level.

Go for Regular Physical Activity or Exercise

Regular physical activity or exercise has a host of many health benefits. Do whatever sport or physical activity you like on a regular basis. Regular exercise keeps the body strong and healthy. Regular exercise can make your body systems stronger and more efficient. Some benefits include reduced risk of having diabetes, reduced risk of blood pressure, help in weight management, develop strong and healthy bones, muscles and joints, improve blood flow throughout the body, improve the body's capacity to use calories, and reduces both mental and physical stress. Start exercising on a regular basis for better health.

Meditate and Reflect

Taking time out from your busy schedule to meditate and reflect can act as a good medicine. Meditation and reflection are now recognized as having many benefits for health and wellbeing. It has been implemented in the management of some forms of illness, management of stress, and even in accelerated learning programs. For inner happiness, it is important to meditate and reflect.

Think Positive and Be in Control

Positive thinking generates positive vibes in our body. Always try to keep your mind and emotions in conscious control. Positive thoughts and emotions lead to positive feelings and have a positive effect on our body. Positive thinking always keeps you in a happy state of mind, that will facilitate good health and wellbeing.

If we truly adhere to and live by the above mentioned principles of health, it will contribute to our long, healthy, and happy life. It will also help us to avoid lots of diseases, undue stress, and many forms of unhappiness.

ACTIVITY 9.3

Make a chart of five good habits of yours which correspond to good health.

Note

INTEXT QUESTION 9.3

1) Mark the following statement as True or False. **True/False**

a) Every single cell in our body is made up of water. ( )

b) A healthy diet consists only fats, fibre, vitamins, and water. ( )

c) The benefits of regular exercise are improving the body's capacity to use calories, and reduce both mental and physical stress. ( )

d) Positive thinking leads to negative feelings and have a negative effect on our body. ( )

e) Regular exposure to toxic air can improve the health and functioning of the organs of the body. ( )

f) Lack of sleep may cause problems in mental clarity, memory, moody( ) disposition, and higher stress level.

g) For availing quality of life always say no to use of drugs, smoking and alcohol. ( )

h) For inner peace and happiness, it is important to meditate and reflect.( )

9.4 FACTORS INFLUENCING HEALTH

You have learnt about the different dimensions of health and it reveals that lots of factors are involved in the determination of our health. Individual characteristics, behaviour and other factors affect one's health and communities' health as well. A few more factors are:

Personal Essence

Personal essence means descriptive characteristics and concept of one's life. It is related with your belief system, expectation from the life as well as purpose of your life. You can say personal essence is a lens by which you can perceive your life. If your personal essence is not in harmony with your desires, that will have an adverse effect on your health.

Heredity

From the time of conception our health is determined by our genes. The genes we receive from our parents cannot be altered. A few diseases such as diabetes and mental retardation passing from one generation to other have genetic origin. More or less our health depends on our genetic makeup.

Note

Environment

Environment whether it is internal or external plays a dominant role in determination of our health. Internal environment relates with the functioning of our internal organs and systems, whereas external environment relates with our surrounding. We can be exposed to any disease if any one of our organs or systems starts malfunctioning. Same will happen if our external environment like air or water quality are not upto that level.

Lifestyle

Lifestyle is one of the most determinant factors which influences our health. Lifestyle means 'the way we live'. Our culture plays a significant role in deciding our lifestyle. It our behaviour and habits there is an influence of our culture. Good lifestyle such as good food habits, right sleep pattern, habit of exercising will have a positive effect on our health.

Social

It is said man is a social animal, and for survival we have to interact with fellow beings. Socialisation means establishing a cordial and positive relationship with other individuals of the society. If we have cordial and positive relationship with other fellow beings that will contribute to better health.

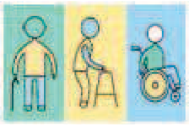
Gender

Our gender is also one of the influential factors for determining health. Like women are prone to iron deficiency diseases due to menstrual period, whereas men suffer from other different kind of diseases.

Gestational (Growth) and Developmental Factors

This factor is related with the young children. It relates to genetic makeup, intra-uterine influences, any birth trauma, and the effect of vaccinations. All of the above mentioned factors will influence our health.

Progression of Disease



When we are not able to handle the severity or long duration of ill health that is progression of disease. If we are not getting proper treatment in due time that would result in progression of disease or illness and will make conditions worse to handle.

Note

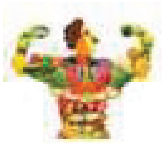
Socio-economic Conditions

Our income, educational level, nutritional status, employment and health services are included in socio-economics conditions.

a) **Income:** Level of income would affect our health. A wealthy person has the capacity to go for better medical treatment and for poor it is not possible. So you can say our income has an impact on our health.

b) **Education:** Educational status has an influence on health, especially female educational status. Education helps us to understand the importance of clean and conducive environment, better lifestyle, good food habits as well as maintaining good health.

c) **Nutrition:** Our socio-economic status decides what will be in our plate to eat. If we are economically sound then we can have better nutritional food. But it is a misconception that only rich can have nutritional food, there are lots of food stuff available in market which a poor man can have. But they must have knowledge about it. Poor diet or starvation has an adverse effect on our health; so try to have good nutritional food which is essential for normal growth and help to fight against infection.



d) **Occupation:** Our occupation plays a deciding factor in determining our health. If we are better employed then we can have better income and work environment. Better employed persons have easy access to health care but it is not possible in case of unemployed person due to lack of money.

e) **Health services:** It is believed that if we wish to go for better health services that requires lots of money. That is true in larger context. Better health services like safe and pure water supply and timely immunization cost a lot, but they prevent us from lots of illness.

External

External factors could be anything. It could be an accident, sudden trauma or injury, your exposure to electromagnetic frequencies by the use of laptops, mobile phones, remote keys, wireless networks, working conditions and hours etc. It also relates with use of chemicals in our personal care items. The influence of external factors on our health is very huge and it is required to address for better and healthy life.

Note

ACTIVITY 9.4

Search five people in your surrounding who are suffering from any disease or pain and write what could be the probable factor for that. For example, Mr. X in your locality is suffering from diabetes. The probable causing factor of this could be heredity or inactivity.

S.N.	Name of the Person	Disease/Pain	Probable Causing Factor
1			
2			
3			
4			
5			

INTEXT QUESTIONS 9.4

1) State any five health services which could be provided by the government.

2) Explain any two external factors which affect our health.

You have learnt about health in the above sections, but do you know that in yog health is perceived in a different manner. Let us study what is the yogic concept of health.

9.5 YOGIC CONCEPT OF HEALTH

In yogic concept health is defined differently as compared to general health. According to Yogsutra of Patanjali "optimum health as a state of mind that is alert and in peace at the same time". Here the "state of mind" is referred as "*citta vrtti nirodha"* which means elimination of the fluctuations of the mind. So from yogic perspective health may be defined "to achieve and retrain oneself in a state of yog where the mind is able to achieve its full potential and at the same time be relaxed".

Kaya-sampat is a term which is used in yog to describe health. The English translation of the term kaya-sampat is 'wealthy body'. The kaya-sampat (wealthy body) includes four components which are as follows:

Note

i) Rupa (healthy body structure),

ii) Lavanya (spark of the body),

iii) Bala, (appropriate functioning of the body's system), and

iv) Vajrasamhanaatva, (flexibility and endurance).

This is also considered as a definition of health from the yogic concept. Now in very simple words we can define health according to yogic point of view as-

"a state where an individual possesses wealthy body (kaya-sampat) and able to use her/his brain with full potential."

In yog a person is considered healthy if he/she possesses following characteristics:

- Wealthy body which includes healthy and strong body structure, spark in body and mind, appropriate functioning of the body's system, and flexibility and endurance.
- Proper and smooth breath functioning.
- Possessing the peace within the mind and having positive attitudes.
- Is having a healthy emotional expression.

Yog perceives health as a complete quality of life. This makes very clear that if there is no harmony in human body, mind and all of its systems then an individual cannot possess a state of health. So to be healthy according to yogic concept one must try to achieve perfect harmony in her/his body, mind and its all systems.

DO YOU KNOW?

Rishi Patanjali was a notable scholar of Samkhya school of Hindu philosophy during the period of 48 BCE to 49 CE. He wrote and compiled the "Yogsutras", a text on yog theory and practice. The yogsutras is one of foundation texts of classical yog.

INTEXT QUESTIONS 9.5

1) Match the following words in column I with their appropriate meaning in column II

	Column I		**Column II**
a)	Kaya-sampat	i)	Appropriate functioning of body
b)	Rupa	ii)	Flexibility and Endurance
c)	Lavanya	iii)	Spark of the body

d) Bala — iv) Wealthy body

e) Vajrasamhanahanatva — v) Healthy body structure

WHAT YOU HAVE LEARNT

Health

Health is a condition where an individual is physically, mentally, socially, emotionally, and spiritually sound, thus it is more than just being disease free or free from any physical deformity.

Principles in day to day life

1. Get Fresh Air
2. Drink Adequate Amounts of Pure Water
3. Eat Nutritious Foods
4. Avoid Tobacco Products and Alcohol
5. Get Proper Sleep and Relaxation
6. Regular Physical Activity or Exercise
7. Meditate and Reflect
8. Think Positive and Being in Control

Dimensions

1. Physical Dimension
   a) Externalb. Internal
2. Mental Dimension
3. Social Dimension
4. Emotional Dimension
5. Spiritual Dimension:
6. Occupational Dimension
7. Educational Dimension

Factors Influencing Health

1. Personal Essence
2. Heredity
3. Environment
4. Lifestyle
5. Social
6. Gender
7. Gestational and Developmental Factors
8. Progression of Disease
9. Socio-economic Conditions (a) Income, (b) Education, (c) Nutrition, (d) Occupation, (e) Health services
10. External

Yogic Concept of Health

A state where an individual possesses wealthy body (kaya-sampat) and is able to use her/his brain with full potential.

Note

Note

TERMINAL QUESTIONS

1) Define health and elucidate the factors on which health of an individual depends.
2) Explain the different dimensions of health.
3) Which dimension of health is more influential? Justify your answer with argument.
4) Explain the day to day principles of health life.
5) Suggest preventive measures to remain healthy.
6) Define yogic concept of health. List the characteristics of health according to yogic concept.

ANSWER TO INTEXT QUESTIONS

9.1

1) (i)-(a), (ii)-(c), (iii)- (b), (iv)-(c).
2) (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii).

9.2

1) (a)-(v), (b)-(vi), (c)-(iv), (d)-(i), (e)-(ii), (f)-(vii), (g)-(iii).
2) i- Nutritional Dimension, ii- Curative and Preventive Dimension.

9.3

1) (a) True, (b) False, (c) True, (d) False, (e) False, (f) True, (g) True, (h) True.

9.4

1) i)- Supply of pure water, ii)- Regular Fogging, iii)- Regular health checkup camps, iv)-Vaccination, and v)-Maintenance and timely supply of medicine in government hospital.
2) i)- Natural disaster, ii)- Effect of climate change, iii)- Any psychological disorder,

9.5

1) (a)-(iv), (b)-(v), (c)-(iii), (d)-(i), (e)-(ii).

Note

10

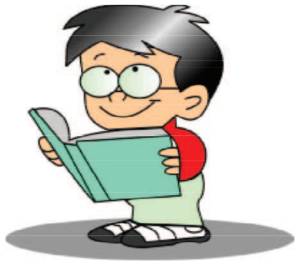
DIET AND NUTRITION

In the above conversation, you come to know proper nutrition in every diet. The diet is very important for our health. This lesson is about diet and nutrition. Diet is the food, taken by living organism; and nutrition is the science which studies the usages of food by our body. You will also study how diet and nutrition plays a significant role in determining our health. Other things which you will come to know in this lesson are the types of nutrients, balanced diet as well as the yogic concept of diet.

OBJECTIVES

After studying this lesson, you will be able to:

- explain the meaning and concept of diet and nutrition;
- classify the nutrients;
- explain the balanced diet and
- explain the yogic concept of diet.



Note

10.1 MEANING AND CONCEPT OF DIET

Diet is the total amount of the food taken by individuals or any other organisms for their survival. Usually diet is referred as a 'blend of specific nutritional food' taken by a person for good health or weight management. We, the human beings are omnivores and due to diverse culture and society, each of us has different food preferences or food habits.

Food choices and habits play a crucial role in determination of health and durability of the individuals. Food is important for life. We require food for our survival and we cannot survive for a long period without food. Therefore, proper intake of food is necessary for all living beings. The food can be anything that we eat to satisfy our hunger. It comprises solids, semi-solids and liquid. Food also nourishes our body.

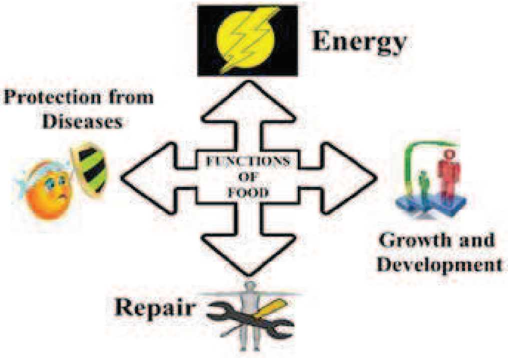
For obtaining quality of life, we should certainly have proper food intake. The foods we eat should also be safe and rich with all the nutrients that our body needs. Try to have a wide variety of foods in your diet and eat them on regular basis. It is also important that we should enjoy food while eating; the food should look, smell and taste good. Without nutritious food, no one can optimise his/her potential to the full extent, as well as adults will face difficulty in doing their best.

Diet is the sum of the food consumed by us for our survival. It refers to the use of specific intake of nutrition for health or weight management. Proper and timely intake of it is essential because it contains substances which perform important functions in our body.

As you have learnt the meaning of diet, now we are going to learn why food is required and what it does for us.

10.1.1 Functions of Food

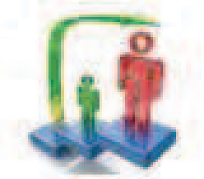
Food performs the following **four** important functions:



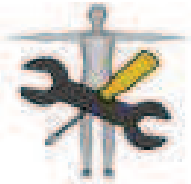
Note

- **Energy:** For performing any work, energy is a necessity. Our energy is spent when we are engaged in performing work. That is why, our body get tired after performing any work. Food is the major source of energy for our body. Therefore, food is important to regain lost energy. If our body does not get proper food in due time, it would become weak.

- **Growth and Development:** The proper and nutritive food helps the growth and development of our body. Body stops growing if it does not get proper food. Proper nourishment from the food we eat increases the cells counts present in our body. Inadequate or wrong choice of food obstructs the healthy growth and development of our body.



- **Repair:** You know, God created human beings in a self-repair mode. Lots of wear and tear in our body is happening due to regular work and movement. Our body get damaged by accidents or trauma. You might have seen if we get a cut or wound, it heals up automatically after some time. If our skin is damaged due to burn etc., it regains its shape in due time. For all these functions, our body requires proper food.



- **Protection from Diseases:** Food also helps us to protect ourselves from many diseases. The food we eat has vitamins, mineral and salts. Vitamins do not provide energy or help in repair or replacement of the worn-out parts of the body. Vitamins are essential for protection from disease. Thus, the foodstuff, we consume, provides us the power to fight with germs and viruses. Therefore, we need food and vitamins to protect our body from illness and keep ourselves healthy.

Importance of food cannot be ignored. Our body requires food which can provide us all the elements needed. It is also important to have adequate amount of food. Too much food or lack of food, both are not good for health. Thus we should eat the appropriate amount of food containing the right amount of nutrients.

INTEXT QUESTIONS 10.1

1) Define 'diet'.

....

....

....

Note

2) Explain the importance and role of food for our body.

....

....

....

In the above section, you have learnt that we eat food for the nourishment of our body. Now, you will study about the meaning and concept of nutrition. It will help you to understand the meaning of nourishment.

10.2 MEANING AND CONCEPT OF NUTRITION

The food make us fit and healthy. Whatever we eat, undergoes through different processes. The science we study about the food and its usage by our body is called nutrition. Nutrition includes food intake, digestion, absorption, assimilation and excretion of waste. Basically, nutrition is the interaction of nutrients and other substances present in the food. It helps in the maintenance, growth, reproduction and health of an individual.

Nutrition is science to study the process of food intake and its utilization of by our body.

10.2.1 Nutrients

We have learnt that food nourishes our body and it also helps the proper growth of the body and its functioning. This growth and nourishment happens due to nutrients available in the food. The nutrients are molecular (chemical) substances in the food required by all living organisms to survive, grow, and reproduce. Nutrients are digested and then broken down into basic units to be used by the living organisms. Let us study about the type of nutrients.

Do you know

DO YOU KNOW?

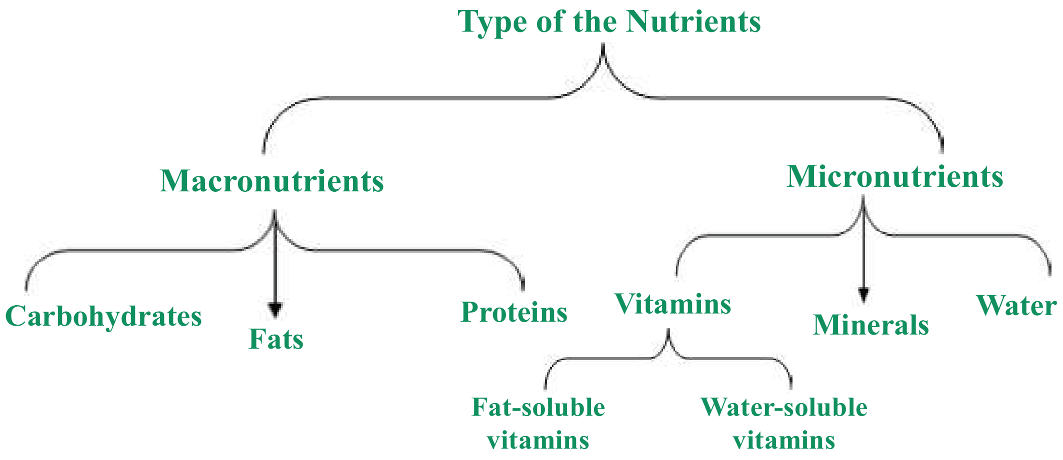
In India National Nutrition Week is celebrated each year from 1st to 7th September. The purpose is to make people aware about important tips of their health and well-being.

For more information you can visit https://www.indiacelebrating.com/events/national-nutrition-week/

10.2.2 Type of Nutrients

Our food constitutes hundreds of nutrients. These are mainly grouped into two types namely- (1) Macronutrients, and (2) Micronutrients.

Both nutrients are needed and equally help in maintaning better health. Each nutrient has important role in our body, but in a differently all manner.

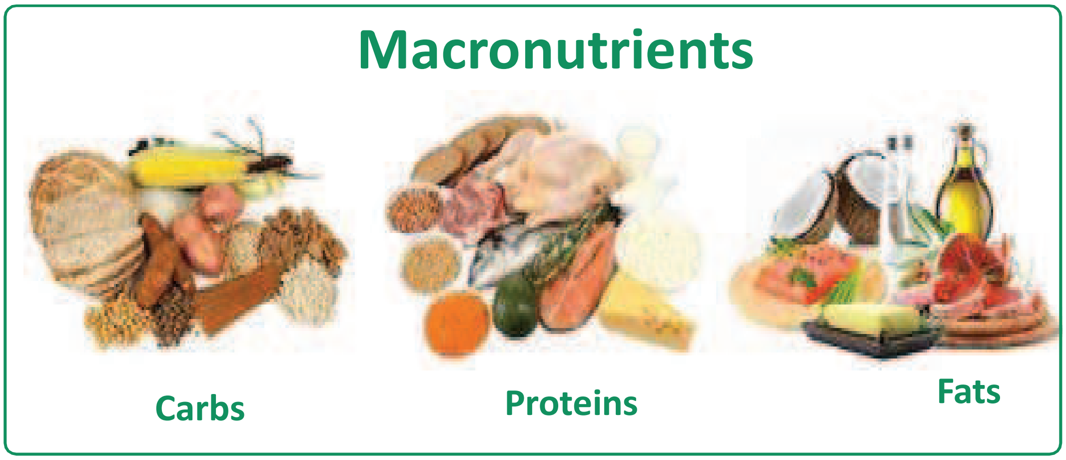


Let us discuss, in detail, about the nutrients.

10.2.3 Macronutrients

Macronutrients are main source of energy for our body. They are available in big amount in the food and are also needed by the body in larger quantity.

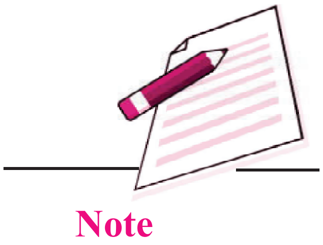
Carbohydrates, fat and proteins are known macronutrients.



Now, we will study each nutrient in detail.

- **Carbohydrates**

  Carbohydrates are found in a wide variety of foods. Carbohydrates are treated as the body's major source of energy. Its unit of measurement is kilo calories. Carbohydrates rich foods are easily available and consumed by all. The



Note

foods like cereals, wheat, rice, bajra, maize, pulses, rajma, channa, potatoes, sweet potatoes, sugar, jaggery etc. are rich source of carbohydrates. We need to have about 45 to 65 percent of total calories from carbohydrates.

- **Fats**

Most of the people think that fat is bad for our health, but do you know, it is actually a key nutrient and very essential component of our healthy diet. Fat acts as an insulator for our body and allows us to maintain our body temperature. Fat helps us to protect our internal organs by acting as a cushion to the organs. The fat seems to be important, but more than required quantity of it is bad for our health. The fats are composed of fatty acids and its nature depends on the type of fatty acids. There are two types of fatty acids. One is saturated and the second one is unsaturated. Solid fats comprise saturated fatty acids. Unsaturated fatty acids are found in oil like products. It is recommended to take 20 to 35 percent of calories through fats.

- **Proteins**

Proteins help to build, maintain and repair the muscles and other body tissues. Proteins are composed of amino acids which is the smaller units. This amino acid is classified into "essential amino acids" and "non-essential amino acids" and their count is altogether 22. Out of which 8 amino acids, our body cannot yield are known as essential amino acids and they should be provided through the food. Rest of the 14, our body produces. They are known as non-essential amino acids. All dairy products, poultry, meat, fish, eggs, pulses, cereals, soybeans, nuts and oilseeds, groundnuts, etc. are rich source of proteins. It is suggested to consume 10-15% of total calories.

DO YOU KNOW?

- A **calorie** is the quantity of heat required to raise the temperature of 1gram (g) of water to 1 degree Celsius (°C). A kilocalorie is the amount of heat required to raise the temperature of 1000g of water to 1°C.
- The energy yielded per gram by Macronutrients is as follows:

  1 g Carbohydrate = 4 Calories (kcal)

  1 g Fats = 9 Calories (kcal)

  1 g Protein = 4 Calories (kcal)

Note

ACTIVITY 10.1

If you eat 200 grams of Rice then calculate how much calories you will get.

INTEXT QUESTIONS 10.2

1) Define nutrition.

....

....

....

2) Explain the nutrients.

....

....

....

3) Match the following nutrients in column I with the sources from which we get given in column II.

Nutrients	Food Sources
a) Carbohydrates	i) Cheese, Ghee
b) Fats	ii) Bajra, Potatoes
c) Proteins	iii) Butter
	iv) Paneer, Milk
	v) Wheat, Rice
	vi) Pulses, Meat

10.2.4 Micronutrients

Apart from the carbohydrates, proteins and fats, other important nutrients which we get from foods comprise vitamins and minerals. They are called micronutrients. These micronutrients are needed in very small amount. Both macronutrients and micronutrients are essential, but if we are not taking these micronutrients in required amounts, it may cause deficiency leading to several diseases.

Note

Now, we will study some of the important micronutrients.

- **Vitamins**

Vitamins are present in our body in small quantity, however vitamins play significant roles in different chemical processes occurring in the body. Vitamins are responsible for the metabolism of carbohydrate, protein and fat. There are total 13 vitamins, categorized into two types:

i) **Fat-soluble vitamins**: Includes vitamins A, D, E, and K.

By the name you can understand these vitamins need fat to be absorbed.

ii) **Water-soluble vitamins**: Includes vitamin C and B vitamins. Vitamin B further include vitamin B-6, vitamin B-12, thiamine, niacin, folic acid, riboflavin, pantothenic acid and biotin.

These vitamins need water to dissolve, before entering in the bloodstream.

- **Minerals**

Minerals are also important for our body like vitamins. They comprise a small quantity of the total body tissue. These are required for lots of vigorous processes in the body as well as for proper growth and development of the body. Minerals can be divided into two categories based on the body's need. Our body demands the major minerals such as calcium, potassium, sodium, magnesium, phosphorus, sulfur and chloride – in larger quantites. On the other hand, the trace minerals are - iodine, copper, fluoride, zinc, iron, chromium, selenium, molybdenum and manganese are required in smaller quantity. There are about 19 minerals needed by the body in different quantities.

Note

- **Water**

Water in known for quenching the thirst, but it is something more than that. Water is a major nutritional component. About two-third of our weight is water. It is available in all the cells. Water helps to regulate our body temperature and it also lubricates the joints and protects the organs and tissues from shocks. Water also helps in digestion, absorption and acts as a carrier to transport important substances. For example, oxygen in the whole body. On a regular basis, we need to have 6 to 8 glasses of water per day.

ACTIVITY 10.2

Fill the following information in the given table:

i) List the two main dishes you ate today.

ii) Identify the food items (ingredients) used in both dishes

iii) Also identify the macro and micro nutrients present in them.

S.No.	Dishes eaten	Ingredients	Nutrient	
			Macro	Micro
1				
2				

INTEXT QUESTIONS 10.3

1) Answer the following questions

   a) Define Vitamins

   ....

   b) Explain the functions of minerals.

   ....

Note

2) **Right tick (✓) against each of the following vitamins whether they are Water soluble or Fat soluble**

Vitamins	Water Soluble	Fat Soluble
A		
B		
C		
D		
E		
K		

After studying nutrition and nutrients, you may be able to understand the importance of each nutrient. In the next section, we will discuss about the balanced diet.

10.3 BALANCED DIET

As far as the balanced diet is concerned, the appropriate diet structure depends on the individual and one's activity level. In fact, the criteria to determine the proper nutritional blend required by an individual is based on their age, gender, weight, height, and type of activity and level. The nutritional requirement of an adult is different from that of an infant. An infant needs more protein as compared to an adult. In the same manner nutritional requirement of a female is different from that of the male due to their physiological functioning. Each and every factor is important while deciding the nutritional requirement for an individual.

Hence, the balanced diet could be the consumption of appropriate variety and adequate quantity of foods as well as drinks. Balanced diet provides nutrition and energy for the maintenance of body organs and it also helps in the normal growth and development of individual.

Dietary Guidelines for Indians, A manual (2010) 2nd edition National Institute of Nutrition, Hyderabad, India

Note

A balanced diet is the foods and drinks which contains the appropriate blend of all nutrients required for normal growth and development and function of an individual.

You may be aware of that diet is perceived in a different way in yog. Now, we will study about yogic concept of diet.

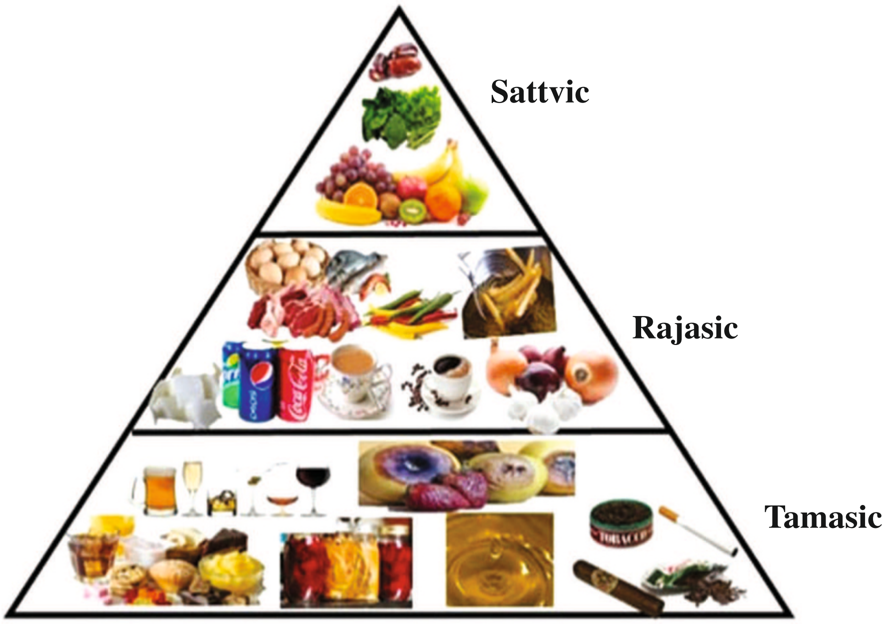
10.4 YOGIC CONCEPT OF DIET

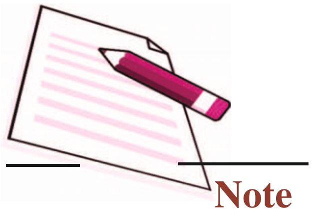
You are familiar with the term diet. Here, we are going to study what the yogic diet is? As you know, yog has emerged very important in today's society. Yog significantly contributes in promotion of health of an individual or group in the society. Yog is the combination of physical, mental, and spiritual practices. It is believed that our body is made of ***prana, mind, intellect, emotions*** *and* ***the spiritual dimensions***. The primary objective of doing yog is to gain control over the mind. So, any practices or habits that cause an imbalance of the mind are considered to be detrimental to progress in yog. Food is one of the important factors among them. In yog the diet is not based on the calorie count of foods or nutrients we get from the food. It focuses on the type and quality of food.

The 'Yogic diet' is defined as foods that are conducive to yogic practices and progress in spirituality.

10.4.1 Classification of Yogic Diet

Yog classifies diet into three types namely- Sattvic, Rajasic and Tamasic diets.





Sattvic Diet

The foods which are light for digestion and help in calming down the mind are regarded as **Sattvic diet**. It includes fresh fruits, veggies and other substances like mangoes, orange, apples, grapes, guavas, bananas, papaya, pomegranates, pears, pineapples, figs, cabbages, spinach, tomatoes, green leafy vegetables, pumpkin, cucumber, cauliflower, peaches, lady's finger, dried peas, green pulse, red rice, almonds, oat-meal, raisins, unpolished rice, bengal gram, dried ginger, dates, green gram, groundnut, honey, lemon etc.

Rajasic Diet

The foods which stimulate the body and excite the desires, making the mind restless and uncontrollable are termed as **Rajasic diet**. This type of food also stimulates and activates the nervous system and speeds up metabolic function. This type of food is cooked for a longer duration to increase its taste appeal. It also includes chillies, sour foods, asafoetida, onion, garlic, tamarind, mustard, tea, coffee, cocoa, white sugar, turnips, fried food, salt, bitter food, fish, eggs, meat etc.

Tamasic Diet

The foods which are heavy for digestion and increase the laziness and anger in an individual are called as **Tamasic diet**. It includes foods cooked twice, fats, oils, fermented foods, containing foul odour, sugary food, food with preservatives, unclean food, stale and rotten foods, tobacco, alcohol and those which are not at all helpful to nourish our body or mind.

INTEXT QUESTIONS 10.4

1) Answer the following questions–

   a) Define balanced diet.

   ....

   ....

   ....

b) What are the major differences among Tamasic, Rajasic and Sattvic diet?

....

....

....

2) Classify the following food items: under Tamsic, Rajasic and sttvic diet.

Tobacco, Bananas, Pickles, Hot things, Turnips, Spices, Onions, Coconut, Brinjals, Dates, Sugar-candy, Meat, Pomegranates, and Twice cooked things:

Tamasic ....

Rajasic ....

Sattvic ....

Note

In the yogic concept, the 'sattvic diet' is considered to be the best diet. The reason is that the mind is often compared to an ape, which is usually restless and wandering all the time. For yog practisers, it will take some time to control the restless mind. During such practice of yog, having foods, which are rajasic or tamasic in nature, can trigger the instability further. On the contrary, the sattvic foods help to calm down the mind. A relaxing mind is the first step towards achieving stability in life and progress in yog.

For health purpose, yogic diet focuses on availability of nutrition from food, not its taste. It is suggested in yogic diet that whatever you eat and drink should be in balance. As per yogic concept, self-control in selection of foods is important for your health. Although, yogic diet theories are very easy, yet they need higher level of dedication and willpower to follow.

You have read about the concept of balanced diet, but a balanced diet in yog is something different. In yog it is based on the concept of **Mitahar** which claims that the final effect of intake of diet depends upon its quality, quantity and state of mind during food intake. The details of all these three factors are as follows:

a) Quality of food: The food quality should be ***sattvic*** in nature and should be acquired in its natural form.

b) Quantity of food: The stomach is divided into three parts and 50 percent of it should be filled with food, 25 percent with liquid and the rest 25 percent should be kept empty for the free flow of air (gases).

c) State of mind while taking food: When you are taking your food, your mind should be in a state of peace and control, enjoy your food, as well as not be engaged in any form of intense thinking.

Note

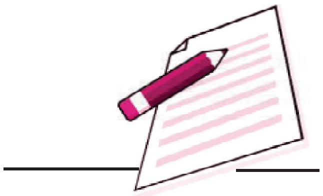
According to Yog a 'Balanced Diet' is that diet which restores balance at all levels and helps in a holistic way of living.

WHAT YOU HAVE LEARNT

- Diet is the sum of the food consumed by us for our survival.
- The food we consume performs four important functions such as (i) helps in growth and development, (ii) repair worn-out tissues, (iii) provide energy, and (iv) protect us from illness.
- Nutrition is a science in which the process of food intake and utilization of it by our body is studied.
- Nutrients are chemical substances in the food needed by all living organisms to survive, grow and reproduce. It is of two types namely (i) macronutrients, and (ii) micronutrients.
- Macronutrients are our main source of energy and they include carbohydrates, fat and proteins, whereas vitamins, minerals and water are the micronutrients.
- A balanced diet is that foods and drinks which contain the appropriate blend of all nutrients required for normal growth and function of an individual.
- The 'yogic diet' is that foods which are conducive to yogic practices and progress in spirituality. It is classified into three types namely- Tamasic, Rajasic and Sattvic.
- The foods which are heavy for digestion and increase the laziness, lethargy, dullness and anger are called as tamasic diet, rajasic diet is that foods which stimulate the body and excite the desires, making the mind restless; the foods which are light for digestion and help in calming down the mind are regarded as sattvic diet. The 'sattvic diet' is considered to be the best diet according to yogic concept.

TERMINAL QUESTIONS

1) Define food and explain its functions.
2) Write about the nutrition, nutrients and its types.
3) Explain the concept of balanced diet.



Note

4) State any three functions of water.

5) What is the basic difference between macronutrients and micronutrients?

6) The nutritional requirements of each of your family members would be same or different? explain with the help of arguments.

7) Explain yogic concept of diet.

8) Differentiate between normal balanced diet and yogic balanced diet.

ANSWER OF INTEXT QUESTIONS

10.1

1) Diet is the sum of the food consumed by us for our survival.

2) Growth and Development, Repair, Energy, and Protection from Diseases

10.2

1) Nutrition is a science where the process of food intake and utilization of it by our body is studied.

2) Nutrients are chemical substances in the food needed by all living organisms to survive, grow, and reproduce.

3) a-ii & v, b- i & iii, c- iv & vi.

10.3

1) a) Vitamins are responsible for different chemical processes occurring in the body.

   b) Minerals are required for lots of vigorous processes in the body as well as for proper growth and development of the body.

   c) Water helps to regulate our body temperature, lubricates the joints, and acts as a carrier to transport of important substances.

   d) Macronutrients are required in large amount whereas micronutrients are required in less amount.

2) A-Fat soluble, B- Water soluble, C- Water soluble,

   D- Fat soluble, E- Fat soluble, K- Fat soluble

Note

10.4

1) a) A balanced diet is that foods and drinks which contain the appropriate blend of all nutrients required for normal growth and function of an individual.

   b) The foods which are heavy for digestion and increase the laziness, lethargy, dullness and anger in an individual are called as Tamasic diet, the foods which stimulate the body and excite the desires, making the mind restless and uncontrollable are termed as Rajasic diet, and the foods which are light for digestion and help in calming down the mind are regarded as Sattvic diet.

2) Tamasic: Tobacco, Hot things, Sugar-candy, Twice cooked.

   Rajasic: Pickles, Turnips, Spice, Onion, Meat.

   Sattvic: Banana, Coconuts, Brinjals, Dates, Pomegranates.

Note

11

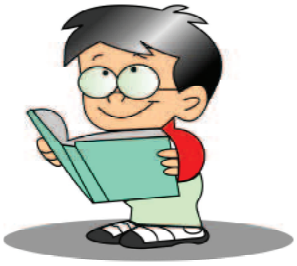
AWARENESS OF LIFESTYLE DISORDERS

Read an incident about how health issues were resolved through active lifestyle and yog.

Amit's father was facing age-related health problems especially high blood sugar, obesity and hypertension etc. along with sleeping disorders. His doctor advised active lifestyle. Amit wanted to know more about active lifestyle. He consulted physical education teacher regarding his father's problems because once he had discussed this topic in his physical education class. Teacher agreed to meet his father at home and during the meeting he suggested his father to start regular exercise or walking for at least one hour along with regular yog practice. His father started active lifestyle and was regular for the yog sessions, after few months his above mentioned problems were reduced and he started enjoying a healthy life.

This made his relatives and neighbors curious to know more about the ways and means to improve quality of life and reduce lifestyle disorders without medicine. In this chapter, you will read about the concept of life and how to manage lifestyle disorders through active lifestyle, exercise and yog.

OBJECTIVES



After studying this lesson, you will be able to:

- explain the concept of quality of life;
- explain the factors affecting quality of life;
- classify physical and psychological disorders;
- learn the management skills of lifestyle disorders and
- practise yog in day to day life.

Note

11.1 CONCEPT OF QUALITY OF LIFE

In contemporary civilization, lifestyle technological wonders are a mixed outcome, where concept of quality of life is new and exciting. World is evolving fast in the past five decades. Stress has increased due to increased technological and industrial growth. Lifestyles of people have changed dramatically resulting in increase in number of obesity cases. Inactivity, stress, tension also increase in the consumption of smoking, alcohol, tobacco etc. on rise. If we compare disease with accidents and war, lifestyle related problems are biggest killer in the world today.

WHO defines Quality of Life as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns." It is a broader concept which includes negative and positive aspects of life with regard to physical, mental and social environment of an individual. We can take an example of an individual. He/she is a physically disabled person, doing job in multinational company. We feels positive about her/his energy level, physical condition, having good social support, support from company and colleagues etc. And another individual having good fitness in the same company feels uncomfortable regarding his social recognition, pain in body, thinking about physical appearance etc. We can say that one person is having a good quality of life score, in an another example, a rich person is not satisfied with his life and poor person enjoy life with less money. In this case, poor person has good score in quality of life. It is important how we feel about ourselves with regard to our physical health, social relations, independence, environment etc. It should not be linked with health because health is one dimension of the quality of life.

11.1.1 Dimensions of Quality of Life

Quality of life covers subjective aspects of positive and negative approach of life. Quality of life covers a variety of domains including health, energy level, working status, recreational aspects, social functioning, living standards, happiness, emotions, expectation, judgments etc. but World Health Organisation (WHO) forecasts six dimensions of quality of life.

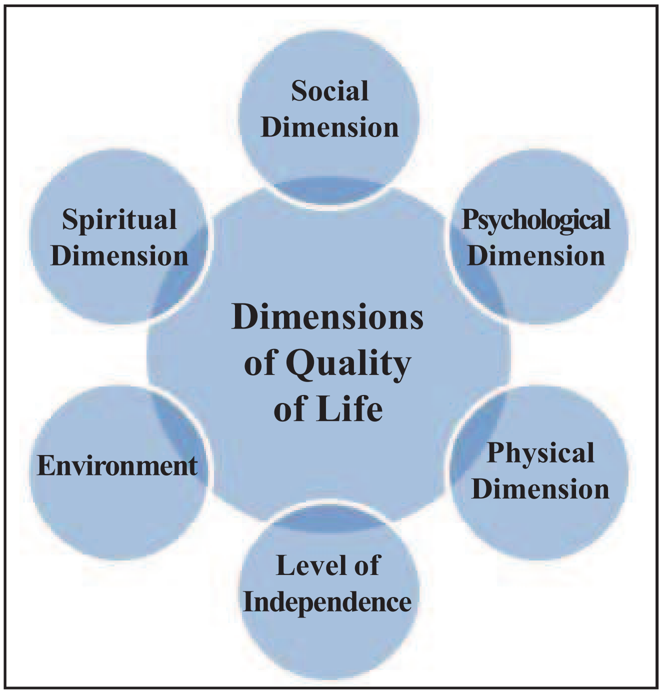
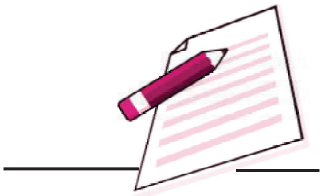


Fig: 11.1: Dimension of quality of life.


Note

Physical Dimension

An Individual should have enough energy with which he can perform day to day task without having any disease, fatigue, pain and discomfort. It is all about sound sleep and rest. It is a state of body where all the organs work at optimal level, expecting low fat, good complexion, bright eyes etc.

Psychological Dimension

In this domain, we focus on individual's self-esteem, positive and negative thinking, body image, memory, concentration etc. It is a state of balance between expectations of individual and the society.

Social Dimension

Social dimension can be defined as individual's relationship with society. It is an individual's responsibility to maintain harmony with surrounding people and ensure the smooth social function in it. The social component means the ability to interact successfully with people and one's personal environment.

Spiritual Dimension

Spiritual health includes the aim of life, commitment to some higher being, integrity, principles and ethics, and belief in concepts. It talks about why we are

Note

here?, what is life? etc, and provides direction in life. It should not be linked with religion or god.

Environmental Dimension

The environmental dimension focuses on improvement and development of quality of life in the community and consists of laws which help to protect physical environment. It includes health, financial aspects, safety, security, opportunities for obtaining new knowledge and skills of an individual in community.

Level of Independence

This domain is associated with mobility in life, activities of day to day life, dependence on medical substances and medical aids, working capacity etc.

11.2 FACTORS AFFECTING QUALITY OF LIFE

There are several impacts of eventful and competitive life style and technological advancements which may influence physical, mental, social and emotional functioning of an individual's quality of life and well-being.

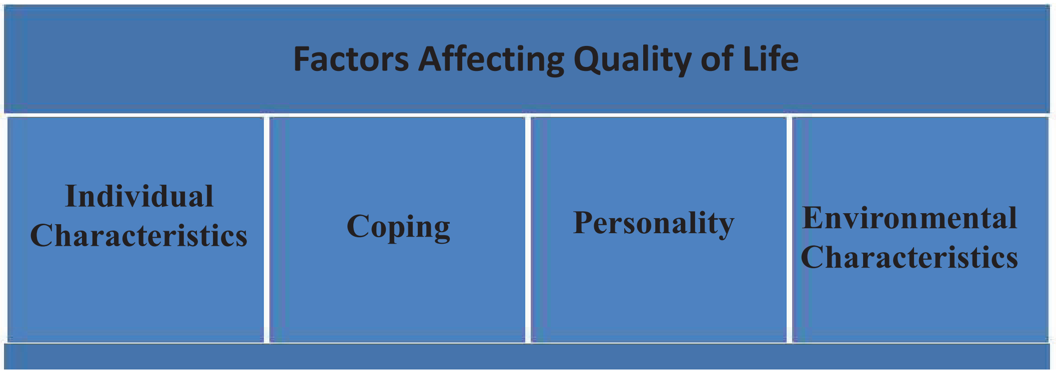


Fig: 11:2: Factor affecting Quality of life.

Individual Characteristics

Quality of life is influenced by an individual's own characteristics that include how an individual thinks and recognizes about her/his life and how her/his attitudes, values, etc. are affected by the environment.

Coping

Quality of life is influenced by the individual mechanism of coping with the stress. An appropriate coping strategy applied by an individual on appropriate time with a focus on event helps in achieving a better solution.

Personality

An individual's personality characteristics like optimism, self-efficacy and self-control etc. inûuence quality of life. Self-mastery, self confidence and self-esteem are positive indicators of quality of life.

Environmental Characteristics

Environmental factors like unemployment, poverty, pollution etc. are not under control of an individual and affect her/his quality of life. There are other factors also which influence quality of life of an individual like poor housing, income and education.

Note

DO YOU KNOW?

Factors affecting Longevity

- Lifestyle behaviours
- Heredity
- Social circumstances
- Medical care
- Environmental conditions

ACTIVITY 11.1

Visit your neighbouring garden and prepare collage of the physical activity performed by different individuals.

INTEXT QUESTIONS 11.1

Complete the sentences with appropriate words.

1) i) Physical Dimension of quality of life covers ....

ii) Individual responsibility to maintain harmony with surrounding people comes under .... dimension of quality of life.

iii) Dependence on medicinal substances comes under .... dimension of quality of life.

Note

2) Which one of the following factors does not affect the quality of life?

   a) Individual characteristics

   b) Coping

   c) Regular physical activity

   d) Environmental characteristics

11.3 PHYSICAL AND PSYCHOLOGICAL DISORDERS

Lifestyle has emerged as major modifiable determinant of health and disease. Many of the present-day lifestyle diseases are due to faulty ways of living. Environmental pollution, improper diet, sedentary lifestyle, lack of exercise, addiction to smoking, alcohol, and drugs, mental stress etc. are the main reasons for present day diseases. Following healthy lifestyle can easily prevent most of these diseases.

Lifestyle, physical disorders are heart related disease. Cancer, respiratory diseases, accidents, diabetes, hypertension, migraine, cervical and lumbar spondylitis, alcohol-related hepatitis, sexual dysfunction, miscarriages, etc. are becoming more common nowadays.

Lifestyle, psychological disorders also include stress in women, peer pressure among adolescents, anorexia nervosa, bulimia nervosa, stress, work load, work life balance etc. are common due to poor lifestyle.

11.4 MANAGEMENT SKILLS FOR LIFESTYLE DISORDERS

Fig 11.3: Managment Skills for Lifestyle Disorder

Note

ACTIVITY 11:2

Prepare a checklist of ten activities for promoting lifestyle. Collect information from 2 children, 2 women and 2 adults and compare their lifestyles.

Physical Dimension

An individual should form habits to do regular and vigorous exercises and establish healthy eating habits in day to day life. They should also keep focussing on safety related habits in their home, office, roads etc. (like seatbelts, fire, bike riding, etc.) and also establish firm attitude towards not to use tobacco, alcohol, smoking etc.

Social Dimension

A human being is a social animal, but now a days technology over shadows the social aspect of a society. Everybody is living her/his own life, sometime an individual feels isolated. An individual should seek companionship and show concern with others to socialize. An individual must have sense of responsibilities to step forward to show the willingness to share work responsibilities with others.

Emotional Dimension

In present scenario everybody is in stress and there is a variety of stressors. An individual should develop appropriate coping behaviour for a variety of situations and talk freely about her/his feelings with others.

Spiritual Dimension

There are lots of pressure of work in which an individual can not focus on inner self. Individual should develop an awareness of life versus death and a sense of the importance and span of life. Individual should establish a value system that can distinguish between right and wrong and show compassion and forgiveness.

Intellectual Dimension

An individual should develop creativity and curiosity in his behaviour and develop skills. The focus should be on learning cause and effect concepts and recognizing the area of the world through a variety of experiences.

Occupational Dimension

An individual should be able to classify a variety of careers and jobs in life and he/she must understand the importance of work and money. Individual should start developing work habits from the beginning.

Note

Environmental Dimension

An individual should develop habits to recycle bottles, papers etc. and also display the habits for energy conservation like saving water, electricity etc. An individual should show respect towards nature by saving plants, wildlife, etc. and also encourage others to maintain the environment green and clean.

INTEXT QUESTIONS 11.2

Complete the sentences using appropriate word.

1. i) Regular and vigorous physical exercise is management skill of .... dimension.

   ii) Hypertension comes under... disorder.

   iii) Anorexia nervosa comes under Life style .... disorder.

2. Which one of the following is not covered in intellectual dimension?

   a) Creativity and curiosity behaviour

   b) Establishment of value system

   c) Establishment of skills

   d) Cause and effect concepts

11.5 YOG FOR DAY TO DAY LIFE

Yog is an art of connecting soul with mind and body. It provides us strength, flexibility, mental peace, cleanliness of body and good health. Due to fast life, an individual faces lots of health related problems which can be solved by doing yog regularly. Yog gives energy which leads to efficient man power and help to make nation better. Everyone should be involved in performing yog daily to stay fit. There are lots of benefits in day to day life of which a few are discussed (See Fig. 5.1)

Inner Peace: Yog practice promotes inner peace which helps an individual fight with stress and other problems. Inner peace is directly related with stress which is a negative indicator of health. Doing Yog increases peace level and makes you more joyful resulting in more confidence. Decreased stress means that you will be healthy because it is scientifically proven that stress makes us unhealthy, but doing yog can prevent it.

Note

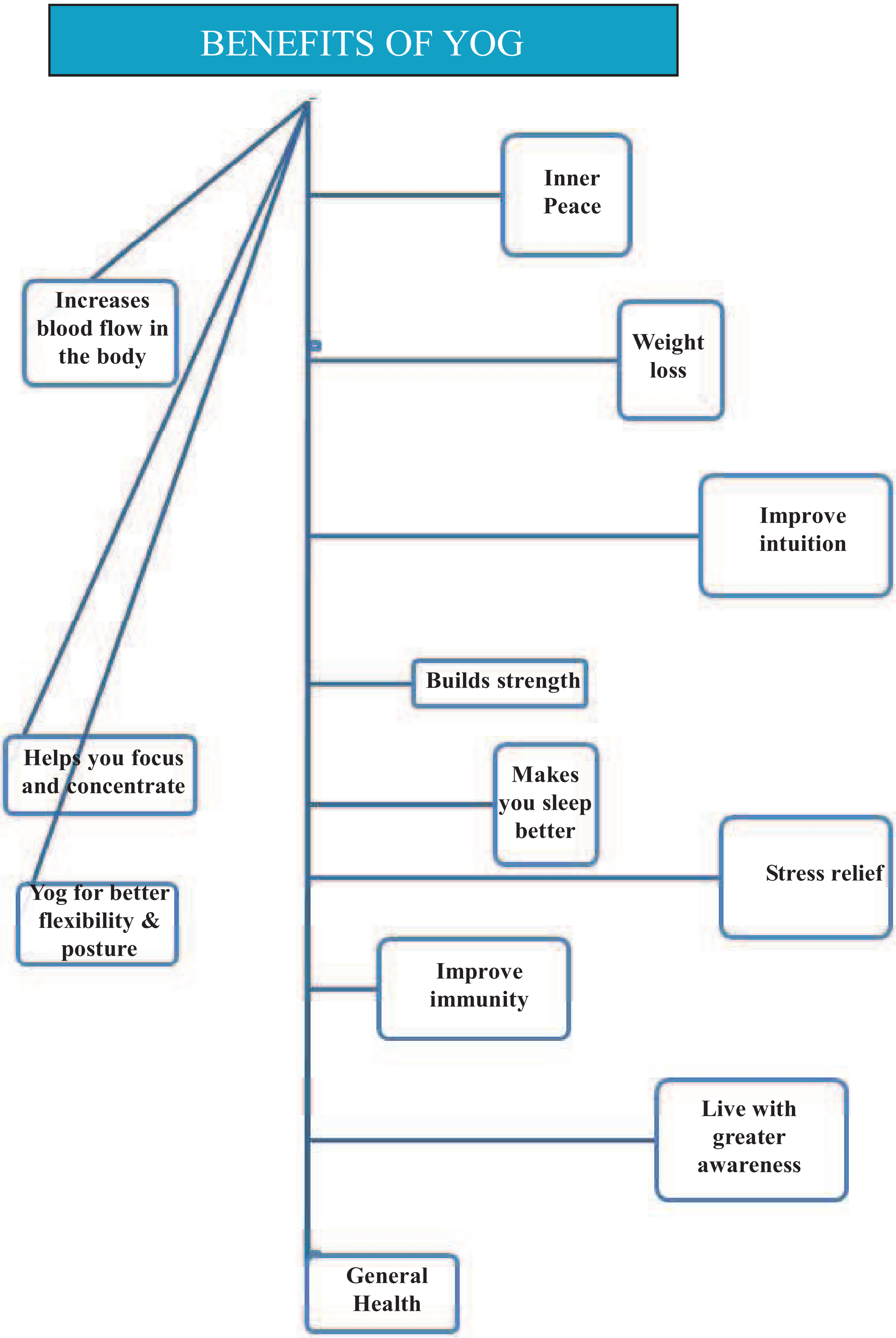

BENEFITS OF YOG
Inner Peace
Increases blood flow in the body
Weight loss
Improve intuition
Builds strength
Helps you focus and concentrate
Makes you sleep better
Stress relief
Yog for better flexibility & posture
Improve immunity
Live with greater awareness
General Health

Fig. 11.4

Note

General Health: Modern life is very stressful, and there is more pollution in our surrounding. People living in big cities have to face several problems, and one of them is laziness. Even 10-20 minutes of Yog can awaken you fully. Better health means better life.

Better flexibility and posture: We must do yog regularly to make body flexible and stable and balance in posture. Regular yog practice, stretches and tones the body muscles and also makes them strong. It also helps improve your body posture when you stand, sit, sleep or walk. This would, in turn, help relieving your body ache due to incorrect posture.

Increases blood flow: Due to yog practice, metabolism increases blood flow. The body gets more oxygenated by doing yog, and heart works efficiently. Oxygenated muscles can generate good force; stay active, do work efficiently.

Helps increase focus and concentration: Yog helps your body to feel relaxed. This means that you are less stressed and can quickly focus on your work. That's why children and teenagers are also encouraged to do yog because it helps them focus on their study better.

Makes you sleep better: Stress free body and inner peace provide platform to relax body that promotes sound sleep without waking up in mid night and changing your body posture. A good sleep is required for a better day. If you are sleepy during the day, it is most likely you won't be able to do any better and may loose opportunities.

Builds strength: Practice of yog provides strength to the muscles and bones. It helps in maintaining good posture and developing confidence to do work.

Weight loss: There are different types of yogic practices which help in losing weight like Sun Salutation and Kapal Bhati pranayama. Regular practice of yog helps us to form a habit to sensitise our body and its needs which further check food intake and calories consumption.

Stress relief: Regular yog practice helps to calm down the level of stress that accumulate during traveling, house work or in office.

Improves intuition: Meditation is a powerful tool to improve intuition ability. An individual can realize, what is the need of a situation, and how to get positive results etc. Yog is a continuous process, regular practice gives reflective results.

Practising regular yog in day to day life leads to good health and better relation with community. Yog is not only to maintain health but also to cure diseases.

INTEXT QUESTIONS 11.3

1) Is yog helpful for weight loss?

2) Which one of the following is not a benefit of yog?

   a) Improve immunity

   b) Stress relief

   c) Laziness

   d) Focus and concentrate

Note

WHAT YOU HAVE LEARNT

- Concept of quality of life
- Dimensions of quality of life: Physical dimension, psychological dimension, social dimension, spiritual dimension, environment and level of independence.
- Factors affecting quality of life: Individual characteristics, coping and personality.
- Classify physical and psychological disorders: Physical disorders: heart disease, cancer, stroke, chronic respiratory disease, accidents, diabetes, hypertension, migraine, cervical and lumbar spondylitis, alcohol-related hepatitis, sexual dysfunction, miscarriages, etc. Psychological disorders: triple role stress in women, peer pressure among adolescents, anorexia nervosa, Bulimia nervosa, stress, work load, work life balance etc.
- Acquire the management skills of lifestyle disorders: Physical dimension, psychological dimension, emotional dimension, spiritual dimension, intellectual dimension, occupational dimension and environmental dimension.
- Yog for day to day life benefits: Inner peace, general health, yog for better flexibility and posture, Increases blood flow in the body, Helps you focus and concentrate, makes you sleep better, builds strength, weight loss, stress relief, Improve immunity, Live with greater awareness, improve intuition.

Note

TERMINAL QUESTIONS

1) Explain the concept of Quality of Life.
2) Explain the dimension of Quality of Life.
3) Highlight the factors affecting quality of life.
4) Classify the physical and psychological disorders of poor lifestyle.
5) Highlight important management skills of lifestyle disorders**.**
6) Describe the benefits of Yog for in day to day life.

ANSWERS TO INTEXT QUSTIONS

11.1

i) Any of Physical dimension like disease, fatigue, pain and discomfort, sound sleep and rest etc.

ii) Social Dimension.

iii) Level of Independence

iv) Regular Physical Activity

11.2

1) i) Physical

   ii) Physical

   iii) Psychological

2) Establishment of value system

11.3

1) Yes
2) Laziness

Note

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12

SCHOOL HEALTH PROGRAMME

Read a conversation between two school kids. One of their classmates falls down and hurts his knees badly and it starts bleeding;

Rahul : Mayank fell down in the ground.

Kriti : His Knee is bleeding.

Rahul : What should we do?

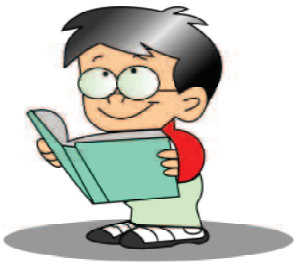
Kriti : I don't know. Let us inform our class teacher. Class teacher comes and takes Mayank to a separate room with a First-aid box in her/his hand

Rahul : Look Kriti, Madam is bandaging his wounds.

Kriti : Oh, wow! Ma'am knows bandaging and we have a First-aid box in our school.

Both of them curious, go to their class teacher and ask why we had a First-aid box in our school and about the medical facilities provided in the school. In this chapter you would know about the school health programme implemented in the school in order to have a little understanding of its objective.

OBJECTIVES



After studying this lesson, you will be able to:

- explain the concept of School Health Programme;
- explain the aspects of School Health Programme and
- learn the organization of School Health Programme.

12.1 CONCEPT OF SCHOOL HEALTH PROGRAMME

The school Health Programme is applied across the country. It is the only community based program which specifically targets on nutrition and health of school aged children. It is focused to improve health outcomes, reduce risk of

Note

communicable and non-communicable diseases and improve the health and wellness of millions of children. Hence sports activities, physical education, yog and counseling facilities have been incorporated to reduce the daily stress, which increase wholesome development of child. Successful health program fortifies healthier educational outcome, improved social equity, improved learning ability, cognitive function and school attendance among the children to handle the tasks fully developed world.

The scheme of a comprehensive School Health Programme, conceived in the 1940's, comprised the following major parts viz. medical care, hygienic school environment and nutritious midday meal and health and physical education. These major parts are important for the wholesome development of the child and hence need to be included as a part of the curriculum.

Schools are in the best position to promote health by providing the latest scientific information, forming and motivating health attitudes, and habits and by providing opportunity for the establishment of desirable patterns of healthy behaviour. School Health Programme empowers the stake holders, teachers, parents and children. It deals with comprehensive school health problem and it creates awareness, health promotion, school health care, child health care, assessment and evaluation of child health. The School Health Programme covers not only the students but also the teachers and other school personnel. It will check student's fitness level, eye check-up, dental checkup, physical pain checkup, Psychological check- ups and put records in electronic medical records for health analysis and diet consultation.

School Health Programme underlines developing healthy habits among the school going children. School Health Programme is concerned with the schools and the children in the schools. It focuses on the holistic health, nutrition of these children, physical education, Yog, Swimming etc. This plays a major role in school.

DO YOU KNOW?

There is dire need for effective School Health Programme in India because, it is a requisite to improve both the education and health status of young people throughout the nation, because 180 million young children are attending nearly 15,00,000 schools. They are there for about 6 hours of classroom time each day for upto 13 years of the most formative lives. More than 95% of young students aged 5-17 years are enrolled in schools. It encourages reducing the illness, disability, and death from common infectious diseases caused among children.

Note

12.1.1 Definition of School Health Programme

W.H.O. states that “An effective school health programme can be one of the most cost effective investments a nation can make to simultaneously improve education and health.”

The **School Health Program** is defined as “the school measures that contribute to the preservation and enhancement of the health of children and school personnel, as well as health services healthful living and health education”.

In reality, it is evident that School Health Program has four inter related pillars, teaching and learning, social and physical environment, health school policy and partnership and services. It gives the efficacy in school health promotion, in improving health or preventing disease of every child.

ACTIVITY 12.1

Write a report on School Health Programme in India.

INTEXT QUESTIONS 12.1

Choose the correct answer.

i) What is the aim of School Health Programme?

a) To promote health care of child

b) To promote mid day meal

c) To promote first aid.

ii) When was the School Health Programme introduced in India?

(a) 1942 (b) 1940 (c) 1944

iii) School health programme reduces:

(a) Risk health factor (b) Headache (c) Illness

iv) What is the benefit of School Health Programme ?

(a) treatment a disease (b) improving education & health hygiene
(c) control of anger

v) What steps are involved in your School Health Programme?

(a) Mid day meal and diet

Note

(b) all body checkup and fitness level

(c) all of above.

vi) W.H.O. defines School Health Programme:

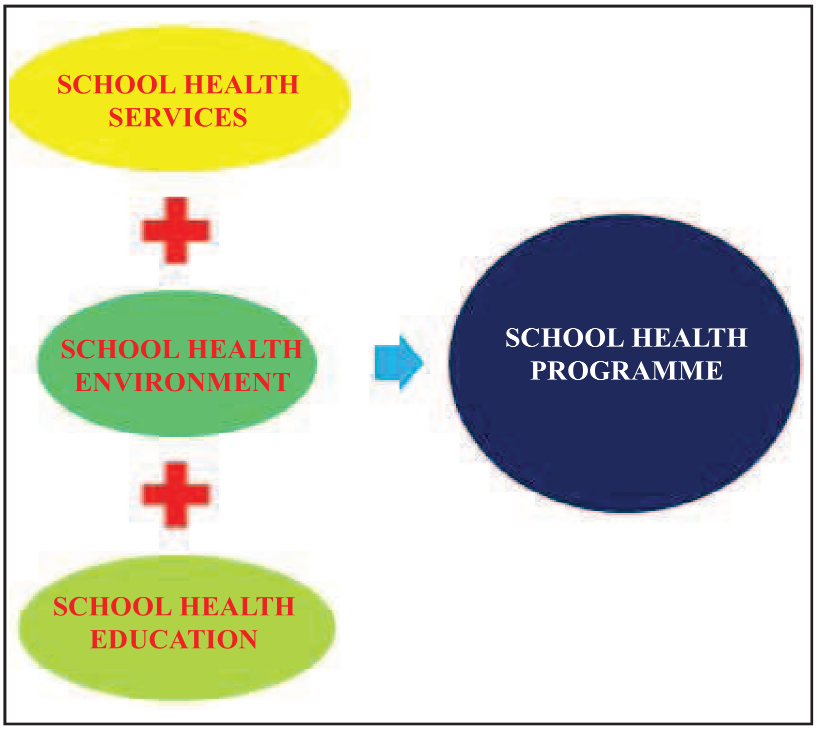
(a) to improve education & health simultaneously

(b) healthful living

(c) health education.

12.2 ASPECTS OF SCHOOL HEALTH PROGRAMME

The School Health Program has mainly three aspects:



12.2.1 School Health Services

School health services are the powerful means of developing a good community for future generation as it plays an important role is development of children. It is an important aspect of school health programme. A school health committee was formed to analyze the standard of health and nutrition among the school children and their improvement.

National Mass Deworming Programme is also a part of School Health Scheme which is executed by Govt. of India under National Health Mission on a fixed

Note

day approach across all states and union territories for school going children aged between 1 to 19 years. In this programme Tab Albendazole and Iron tablets are given to the school students to improve child health, nutritional status, access to education and quality of life.

Features of School Health Services

The task of School Health Services is manifold and varies according to local priorities. Some features of School Health Services are as follows:

- Health appraisal of school children and school personnel consists of periodic medical examination and observation of the children by the class teacher or a medical expert.

- Remedial measures and follow up includes not only the initial medical check-ups but also the regular follow ups and appropriate treatment.

- Prevention of communicable diseases comprises of recording all immunization reports and maintaining these reports as part of school health record.

- Nutritional services requires all the nutrients in proper proportion and adequate for the maintenance of the optimum health. Mid-day school meal is an essential part of program in order to raise the nutrition level of children in schools.

- First-aid and emergency care is a big responsibility on the shoulders of teachers who are trained to provide students basic emergency care in the situation of accidents leading to minor or serious injuries and medical emergencies such as fainting, gastroenteritis all etc. Also, a fully equipped first-aid post should be provided in every school as per the regulation St. John Ambulance Association of India.

- Mental health of the child affects her/his physical health and the learning process. Therefore, there is a great need for vocational counselors in schools for regulating the children into career aspects, drug addiction, mal-adjustment and juvenile delinquency.

Note

- Dental health comprises of dental caries and periodontal disease which are the two most common dental diseases in India. Although, the school health programs have a provision for dental examination still the children suffer from various dental diseases.
- Health education acts as the most important element of School Health Programme. It aims to bring necessary changes in health knowledge, in attitudes and in practice of the students.
- The education of children with special needs CWSN targets to assist them and their family to realise their maximum potential so as to lead a normal life and become productive and self-supporting member of the society.
- School health record means proper maintenance and use of health records. It should contain all

  i) Identifying data, name, date of birth, parents name, address etc.

  ii) Past health history.

  iii) Record of findings of physical examination, screening test and records of service provided.

Note

This record will also be useful in analyzing and evaluating school health programmes.

DO YOU KNOW?

1) What is the appropriate age of the children in School Health Programme?
   School children aged between 5-17 years
2) What is the percentage of total population lies in this age group?
   About 30% of the total population comprises this age group

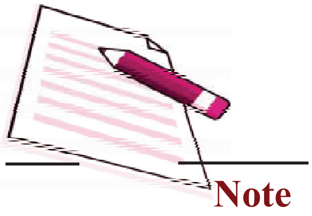
ACTIVITY 12.2

1) Prepare a medical Box for your family and enlist the 5 items which should be part of this Box.
2) Enlist the health record of your family members.
3) Visit any five schools near your locality and make a list of activities being performed about school health programme in those schools.

INTEXT QUESTIONS 12.2

1) Match the following words in column I with their meaning in column II

i) Dental Health	a) To raise nutritional status of students
ii) Mid day meal	b) Health report of every child.
iii) School health record	c) Oral check up of teeth
iv) School children age comprises	d) immediate treatment of an injury
v) Percentage of the total population is	e) thirty percent this group
vi) First Aid	f) Health Scheme
vii) Mass deworming	g) 5-17
viii) School health services	h) 1909



2) Highlight the main features of school health services.

....

....

12.2.2 School Health Enviroment

This is an important aspect of school health programme and it is also called school hygiene. Healthful school living includes a school building, site, and equipment amongst which a child grows and develops. Each school should also serve as best sanitation for every child. So it requires best emotional, social and personal health for students.

Features of Healthful School Living

Healthful school living has the aim of optimum efficiency of school hygiene which can be achieved in school environment. Some features of healthful school living are as follows:

Source- https://www.saratogausd.org/domain/171

- Adequate sanitation, safe drinking water and nutrition education
- Proper execution of mid-day meal programme.
- Location of school should normally be centrally situated with proper approach roads at a fair distance from market place.
- Class room and furniture should suit the age group of students.
- Periodical health examination of children.

Note

- Separate toilets for girls and boys.
- Privacy and safety for girls
- Keeping school free of violence and any other distraction.
- No corporal punishments
- Regular practice of yog, physical education and health education.
- First aid room or first aid kit should be maintained

DO YOU KNOW?

In India, central and state governments committed to ensure inclusive access to wash facility, school toilet, safe drinking water, sanitation and hygiene in the school under the one aspect of mission "SWACHH BHARAT ABHIYAN" which has great impact on school healthful condition.

Visit www.mdws.gov.in

ACTIVITY 12.3

Make a board on which healthful school condition such as food, sanitation and school hygiene information are displayed.

INTEXT QUESTIONS 12.3

Choose the correct answer

1. i) What is the aim of healthful school living?

   a) Nutritional status

   b) Best sanitation for every child

   c) Treatment of injury

   ii) Which programme was initiated by government to ensure all over hygiene of people in the country?

   a) Swachh Bharat Abhiyan

   b) Deworming Programme

   c) Capacity building programme

Note

iii) On which development of child can school health condition impact?

a) Physical development

b) Social development

c) all round development.

12.2.3 Health Education

Health education is the most important part of the school health programme. It consists of teaching numerous types of health information including safety education, personal hygiene, environmental health and family life. The goal of health education should be to bring about beneficial changes in health knowledge, in mind-set, in practice; and not only that but to teach children a set of rules of hygiene also.

Features of Health Education

Some features of Health Education are as follows:

Source: commissaryconnection. dodlive. mil

- Health related knowledge can be obtained by studying health education, while considering a variety of topics.
- Maintenance of school health record. These records are very helpful in monitoring and evaluating school health programme and it provides linkage between the school, the home and, the community.
- Provides curative services which include regular dental check up and rapid treatment wherever possible and referral for a special problem.
- A foundation of support to every child and adolescent.
- Well-implemented health education has been shown to improve the school achievement.
- Active student involvement, every school child is a health worker.
- Daily morning inspection of each child in order to know the sign of illness

INTEXT QUESTIONS 12.4

1) Which type of health information be given to students?

....

Note

2) Explain the goal of Health Education?

....

....

....

3) Explain the main four features of Health Education in School?

....

....

12.3 ORGANIZATION OF SCHOOL HEALTH PROGRAMME

There is no stable pattern of school health administration in India as well as in other countries. Health of the school child is the main responsibility of the parents, teacher, stakeholders, health administrators and the community. The school health committee set up by the government of India in 1960 recommended that it should be an integral part of the general hearth services.

Features of Organizing School Health Programme

- In each school, a health council and health committee should be constituted.
- Health committee should provide leadership and guidance to the health education programme in the school, which will assist the welfare of community.
- The members of this council should include the head of the school, the school medical advisor, health coordinator, various teachers, students and parents' representatives like school management committee members.
- Every school should have a counselor, trained teacher of first aid, nutritionist or a dentist.
- Medical advisor/doctor should be full time or part time in the school because students need medical care and emergency care anytime.
- Health coordinator is most important and responsible person for well implementation of school health programme in school. He/she may be head of the department, Principal and physical educationist.

INTEXT QUESTIONS 12.5

1) What does health committee provide to the children?

....

....

2) Who is main responsible person in health school health committee?

....

....

WHAT YOU HAVE LEARNT

- Identify the health status of a child by optimizing her/his physical, mental, social, emotional state and prevent health risk threats amongst children.
- Understand the supervision and guidance of the health of children.
- Deliver special health provision for the children with special needs.
- Development of the optimum possible health for each child and adult
- Detect, prevent and correct defects and disorders amongst children at early stage.
- Develop wholesome attitude and social adjustment.
- Incorporate health consciousness in children as well as in the teachers, parents and stake-holders
- Reduce the incidence of communicable and non-communicable diseases
- Identify early diagnosis, treatment and follow up of deficits
- Learn the first aid and emergency care.
- Discuss the importance of training of teachers in the primary school and other stake holders in the areas of promotional, preventive and curative services.
- To analyze the impact of regular health check-ups and screening of children for appropriate referral services by well trained teachers and other organization.

TERMINAL QUESTIONS

1) Explain the meaning of School Health Programme.
2) Define school health Programme by W.H.O.
3) Why is Health School Programme needed for students?
4) Explain the different aspects of School Health Programme.
5) Highlight the objective of School Health Programme.
6) Explain each aspect of school health Programme in your words.
7) Why school health Programme is necessary for wholesome development of children?

ANSWER TO INTEXT QUESTIONS

12.1

1) i) a)

   ii) b)

   iii) a)

   iv) b)

   v) c)

   vi) a)

12.2

1) i) c

   ii) a

   iii) b

   iv) g

   v) e

   vi) d

   vii) f

   viii) h

2) Health appraisal of school children, regular medical checkup, prevention of communicable disease, nutritional services, first aid & health education.

Note

12.3

i) b

ii) a

iii) c

12.4

1) Health education is the most important part of the school health programme. It consists of provision of numerous types of health information including safety education, personal hygiene, environmental health and family life.

2) The goal of health education should be to bring about beneficial changes in health knowledge, in mind-set, in practice and not only that but to teach the children a set of rule of hygiene also.

3) Main four features of health education in school are health related knowledge, attitudes, skills and practices.

12.5

1) Health committee provides leadership and guidance to the health education programme in the school, which assists in the welfare of community.

2) Health coordinator is the most important responsible person for a well implemented school health programme in school. He/she may be head of the department, Principal and physical educationist.

Note

13

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PHYSICAL EDUCATION FOR VARIOUS POPULATIONS

Read a conversation between student and teacher:

Student : Teacher, my parents are asking me to do some physical exercise for development of my body and mind. But I don't know any kind of physical exercise.

Teacher : My child, I will tell you about physical exercise for the development of your body, mind as well as spirit too.

Student : Teacher, I am looking forward to know about exercises.

Teacher : Physical exercises are the movements or activities performed by our muscles. It includes free play, games, sports, walking, cycling, swimming, and recreational activities. These activities are performed with various intensity and duration for various purposes.

Student : It's a wonderful experience to learn about physical exercise. Is the physical activities same for everyone?

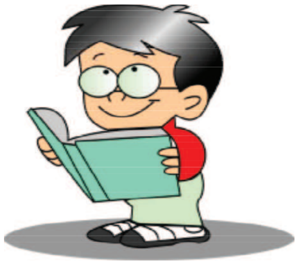
Teacher : No, there are different exercises and their schedules for various age groups and gender are different.

Student : Oh! can you tell me about those exercises for various age groups.

Teacher : We cannot give same exercise to everyone for the same purpose. We can divide our activities according to age groups and gender also.

Here in this lesson, we will learn about the physical activities for different population in details.

OBJECTIVES



After studying this lesson you will be able to:

- explain the meaning of physical exercise;

Note

- demonstrate physical exercise for children;
- choose the physical exercise for CWSN (Children with special needs);
- choose the physical exercise for women and
- choose the physical exercise for older adults.

13.1 MEANING OF PHYSICAL EXERCISE

Physical exercise is a combination of two words. One is 'physical' which means "body" and other is 'exercise' which means "to do any movement or activity", so physical exercise means any movement or activity performed by our body. It could be anything such as walking, jumping, throwing, dancing, sports, cycling, etc.

There are lots of benefit of physical exercises. Regular participation in any physical education programme helps in reducing risk of various diseases and leading causes of death. Regular physical activity helps in reducing the risk of heart related problems, diabetes and mainly cancers and depression among females. It builds and maintains the healthy bones, muscles and joints in men as well as in women too.

We all are different from each other in terms of age, height, weight, gender etc. Thus, the need of exercises is different for everyone. Here in the next section, we are going to study what different types of exercise or activity one can perform, which suit his/her requirement.

13.2 PHYSICAL EXERCISE FOR CHILDREN

Physical Exercise Guidelines for Children (under 5 years)

Active play starts from birth, especially through floor-based activities including tummy-time, reaching, pushing, pulling and crawling. The roots of life long physical exercises are shown in childhood. Children below the age group of 5 must be encouraged especially by their families for regular and routine based exercises. The play game is the very general form of the same. Children of this age do not understand rules and often are not coordinated enough to play organized sports. Walking or running, playing tag, swimming (when at least 4 yrs old), tumbling, dancing, throwing and catching are few activities that can be played in this age group. As they grow older, they might like to try skipping and bike riding.

Physical Exercises for Children Ages 5-8

The children of this age group explore relationship between the objects; so the activities including short instruction times, flexible rules, offer free time for

Note

practices, and have fun. These activities must strengthen muscles and bones. For example: Follow the leader (children's activity game), indoor obstacle course, outdoor obstacle course, musical chairs, playing tag, walking to school, soccer etc.

Physical Exercises for Children Ages 9-12

Children reach puberty at different times. Physical size, strength and maturity vary widely for this age group. They can easily participate in team sports that focus on skill development, equal participation and fun. They are prepared to start strength training with lighter weights and proper supervision and also perform martial arts, hiking, push-ups (with knees on floor), sit-ups. They can participate in minor games.

Physical Exercises for Children Ages 13-17

In this age group activities should be fun and include friends. Teens are ready to focus on personal fitness, competitive and non-competitive sports like football, handball, hockey, basketball, cricket, kabbadi and so on. Activities which strengthen bones and muscles and improve their stamina and endurance must includ canoeing, hiking, rollerblading, yard work and games that require throwing and catching.

DO YOU KNOW?

There are lots of benefits of physical activity. It improves cardio-vascular fitness, make bones and muscles strengthen, helps in weight management and stress management, as well as minimize the chance of getting ill.

INTEXT QUESTIONS 13.1

1) What type of activities should be given to children?

....

2) Is it advisable to give weight training to the children?

....

3) What kind of exercises should be given to children of 5-8 years age group?

....

4) Are the same exercises suitable both for girls and boys up to 10 years of age?

....

Note

13.3 PHYSICAL EXERCISE FOR OLDER ADULTS

Exercising regularly plays a very important role in maintaining the healthy lifespan in elderly adults. Inactivity leads to weakness and poor balance more than the age factor. The risk of developing dementia is increased in older adults due to inactivity or sedentary lifestyle.

Walking or jogging are the weight bearing exercises which can help in maintaining the strength of bones and thus it reduces the risk of osteoporosis and frequent fracture among the older adults. Exercise also play an important role in decreasing the risk of various chronic conditions, heart disease and diabetes.

Maintenance of cholesterol level within a healthy range decreases the risk of heart disease and stroke which can be avoided with the help of regular exercise.

Most important fear in older adults are fear of falling and that can be managed with proper functioning reach in older adults and with exercise it can be maintained.

INTEXT QUESTIONS 13.2

1) List out the exercises suitable for older adult age group.

   ....

2) What kind of exercises should be given to sedentary people?

   ....

13.4 PHYSICAL EXERCISE FOR WOMEN

Regular physical activity helps in reducing the risk of various leading causes of death. Regular physical activity helps in reducing the risk of heart related problems, diabetes and mainly cancers and depression among females. It builds and maintains the healthy bones, muscles and joints in women.

Exercise helps to maintain the weight with overall fitness and also prolonged good health.

It is always advised to consult doctors before beginning exercise if one has been inactive for a long period due to any health issues or pregnancy.

One can only do brisk walking or light exercise for 10 minutes to be active after a long rest.

There are various barriers in physical activity for women as they have lack of time, lack of motivation, lack of energy, parenting and family issues gender stereotyping etc.

Note

Women can sneak these few exercises in their daily routines:

- Take stairs instead of using elevators.
- Going for walking whenever free during break time.
- Avoid vehicles and walk down to work place.
- House work may be done quickly, as in fast pace.
- Participate in Cultural activities etc.

INTEXT QUESTIONS 13.3

1. List the exercises for females of different age groups.

   ....

2. Why should females do physical exercise? Explain with reasons.

   ....

13.5 PHYSICAL EXERCISES FOR CHILDREN WITH SPECIAL NEEDS (CWSN)

Physical activities play an important role in development of children with special needs (CWSN). They help to develop specific motor skill, they make new friends, increase aerobic and anaerobic activities. They develop belongingness and self-confidence as the children with disabilities engage less in social and sporting activities compared to their peers. A lot of these children shy away from people, are embarrassed to be even with their peers, and do not participate in activities like sports because of physical challenges and related psychological issues.

WHAT YOU HAVE LEARNT

- Physical exercise is important for everybody including children, older adults, male and female, and persons with disability.
- Best way to maintain health, well-being, and quality of life can be attained with the help of physical activity.
- Physical exercise can improve the various abilities or performance in specially abled children.
- In older adults, it helps to maintain their mobility and ability to function properly with maintaining good mental and physical health.

Note

TERMINAL QUESTIONS

1) Prepare a chart of exercises for teenage children.
2) Explain the health benefits of exercises.
3) Explain the term disability. Suggest the type of exercises for children will special needs (CWSN).
4) Why is physical exercise required daily? Support your answer with arguments.
5) Suggest exercise schedule for females working in offices.
6) List the exercises for children of 6-10 years age group.
7) Explain long term benefits of regular exercises.

ANSWER TO INTEXT QUESTIONS

13.1

1) Kids should be given natural exercises.
2) It is not advisable to give weight training to the chldren.
3) Following exercises should be given to 5-8 years age group of children - follow the leader, headstands, indoor obstacle course, outdoor obstacle course, musical chairs, jump rope etc.
4) Yes, same exercises for girls and boys up to 10 years of age could be given.

13.2

1) Exercises for older adult age group are walking, slow jogging, yog calisthenics exercises etc.
2) Exercises for sedentary people are moderate to fast walking for at least 30 minutes, own body weight exercises, light apparatus gym exercises etc.

13.3

1) Exercises for different female age groups are walking/jogging at moderate speed, light apparatus gym exercises, own body weight exercises, swimming etc.
2) Physical exercise for females because they have to carry out daily house hold routine challenges so they need exercises specially for back and legs region to ease their routine work.

373en14

14

SPORTS TRAINING

Read the conversation between the student and teacher

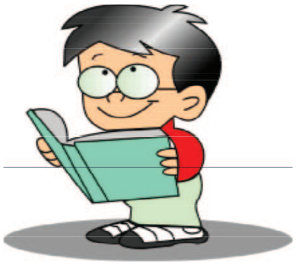
Student : Is there any need for specific training for performance in sports?

Teacher : Certainly yes.

Student : What type of specific training is required?

Teacher : Sports training is systematic training to improve the performance in sports competitions. It includes skill training, physiological conditioning. In this lesson, we will learn about the sports training, fitness and its components and difference between aerobic and anaerobic exercises.

OBJECTIVES



After studying this lesson you will be able to:

- explain the principles, meaning and aims of sports training;
- explain the fitness and its components and
- describe about aerobic and anaerobic exercises and the difference between them.

14.1 MEANING OF SPORTS TRAINING

Sports training is a process of systematic preparation of sportspersons or team to perform well in a sports competition. In this sportsperson or team gets systematic training which is based on scientific principles. The goal of sports training is to train a sportsperson or team to achieve their full potential and perform optimally in a particular competition. Sports training includes- physiological conditioning, psychological training, skill training, and training of game plan or strategy.

Note

14.1.1 Principles of Sports Training

Sports training principles are the guiding forces for coaches or trainer to plan effectively training schedule for sportspersons or team. For an effective use of training principles, it should be taken into consideration for individualized training. Following are the principles of the sports training.

- **Principle of Balance:** This principle broadly focuses on right proportion of each and every performance determinant factor such as physical capacities, psychological makeup, and skill level.
- **Principle of Individualization:** Every human being is different from each-other, so this principle deals with the individual differences. Each training schedule should be designed considering the individual differences.
- **Principle of Overload:** No athlete should be given load beyond his/her abilities.
- **Principle of Recovery:** Ratio of rest and recovery between exercises and time between workouts must be taken care of.
- **Principle of Reversibility:** This principle guides about detraining once athlete discontinues training.
- **Principle of Specificity:** Each sport demands specific requirements and this principle guides regarding game specific requirement.
- **Principle of Transfer:** This principle deals with how the workout performed during the training session can contribute to competitive performance.
- **Principle of Variation:** For obtaining better results of sports training variations in exercises, resting time, and the intensity should be considered.

14.1.2 Aim of Sports Training

The aim of sports training is to train an individual or team to achieve top form and perform better and in a selected sport competition. Different factors are responsible for achieving top form of maximum efficiency. Sports training focuses on reaching top form or maximum efficiency.

INTEXT QUESTIONS 14.1

1) Explain the term 'sports'.

....

2) Explain the principle of individualization.

....

Note

DO YOU KNOW?

Sports performances are affected by the time of day which is known as circadian rhythm.

In the above section you have learnt about the sports training, its principles and its aims. Now we are going to discuss about which physical fitness components are getting trained in sports training.

14.2 PHYSICAL FITNESS AND IT'S COMPONENTS

The ability to perform day to day work without undue fatigue may be termed as physical fitness. It encompasses a wide range of abilities so that one can carry out daily routine with ease and overcome the physical challenges during sports competitions.

14.2.1 Physical Fitness Components

These are basic components which make athlete fit for sports. Let us learn more about components of physical fitness.

Strength: It is an ability of a muscle to overcome resistance. Strength is mainly of three types.

Maximum Strength: It is an ability of a muscle to overcome maximum resistance.

Strength Endurance: It is an ability of the muscle to carry out resistance for longer duration of time.

Explosive Strength: It is an ability of the muscle to overcome resistance in possible time.

Endurance: It is the ability to perform activity with desired quantity and quality under condition of fatigue. Like continuous running for 15 minutes and above is best example of endurance. Endurance may be divided into cardiovascular endurance and muscular endurance.

Speed: It is the ability to cover a distance or perform any action in minimum possible time. Speed may be divided into five sub components which are as follows:

Note

a) Reaction Ability,

b) Movement Speed,

c) Acceleration Ability,

d) Locomotor Ability, and

e) Speed Endurance.

Flexibility: It is the ability of joints to move full range of motion (ROM). Flexibility is also two types. One is Active Flexibility and the second is Passive Flexibility.

Coordinative Abilities: Ability to quickly and respectfully doing a group of movements with better quality and effect. There are following coordinative abilities:

a) Orientation Ability

b) Coupling Ability

c) Balance Ability

d) Differentiation Ability

e) Rhythmic Ability, and

f) Reaction Ability.

INTEXT QUESTIONS 14.2

Fill in the blanks with appropriate word.

1) Flexibility exercises improve .... at a joint.

2) Strength exercises include .... exercises.

3) Squats are used for strengthening ....

ACTIVITY 14.1

Prepare a chart by collecting pictures of 'upper body strength exercises'.

DO YOU KNOW?

To increase overall physical capabilities (endurance), a person should be given certain amount of stress (overload).

Note

In the above section you have learnt about the components of physical fitness. Now in the next section you will learn the exercises you can use to train above mentioned components.

14.3 AEROBIC AND ANAEROBIC EXERCISES

It is often said that exercises cannot be performed without oxygen. To some extent it is true. When exercises are performed for the longer period of time, constant supply of oxygen is required. Whereas certain exercises are performed as ballistics movement or separated in shorter span of time. Such activities do not require constant supply of oxygen. Basic difference in aerobic and anaerobic can be understood by discussing further about aerobic and anaerobic exercises.

Aerobic Exercise

Aerobic exercises are the exercises which are performed with the oxygen and glucose and fat used as fuel. Aerobic activities can be sustained for a longer period of time. Some of aerobic activities are slow and continuous running or jogging.

Anaerobic Exercise

Anaerobic exercises are performed where the constant supply of oxygen is not present. Examples of anaerobic exercises are short distance running like 100 meters. While performing anaerobic exercise our body generates lactic acid which causes fatigue at sustained levels term.

Differences in Aerobic and Anaerobic Exercises

Aerobic exercise	Anaerobic exercise
Involves oxygen in energy production	Doesn't involve oxygen in energy production
May last longer than 2 minutes	Lasts from a few seconds to 2 minutes, then a pause is required
Increases endurance, improves cardiovascular system	Increases strength, improves bone density, builds up muscles

14.3.2 Process of Determining Aerobic or Anaerobic Fitness

For determining the kind of exercise you are performing, you can use your maximum heart rate (MHR) to calculate which exercise you are performing.

Note

To calculate Maximum Heart Rate (MHR):

220 - age = MHR

Figure: Showing different heart rate zones

DO YOU KNOW?

One needs to exercise at 55-85% of your max heart rate (max heart rate per individual is 220-your age) in order to improve one's aerobic fitness.

ACTIVITY 14.2

Prepare chart by collecting pictures of five Aerobic and five Anaerobic exercises.

INTEXT QUESTIONS 14.3

Complete the sentences in a meaningful way

1) Aerobic exercises are performed with ....

2) Anaerobic exercise can not be performed without ....

3) Maximum heart rate is calculated by ....

WHAT YOU HAVE LEARNT

- Sports training is a process of systematically preparing of sportsperson or team to perform well in a sports competition.

- Sports training principles are the guiding forces for coaches or trainers to plan effectively training schedule for sportspersons or team. The principles of the sports training are- Principle of Balance, Principle of Individualization: Principle of Overload, Principle of Recovery, Principle of Reversibility, Principle of Specificity, Principle of Transfer, and Principle of Variation.
- The aim of sports training is to train an individual or team to achieve top form and perform better in a selected sport competition.
- The ability to perform day to day work without undue fatigue may be termed as physical fitness.
- Aerobic exercises are performed for the longer duration of time and with the constant supply of oxygen.
- Anaerobic exercises are performed for shorter duration and in the absence of oxygen for very short period of time.

Note

TERMINAL QUESTIONS

1) Explain the meaning of sport training and list its principles.
2) Explain the components of physical fitness.
3) Differentiate between aerobic and anaerobic exercises.
4) Explain load and recovery principle in sports.

ANSWER TO INTEXT QUESTIONS

14.1

1) Sport is a vigorous competitive activity where a player finds his full of satisfaction and achievement.

2) Individualization Principle concerns adjustments in training based on differences between individual athletes.

14.2

1) Flexibility exercises improve range of motion at a joint.
2) Strength exercises include weight training exercises.

Note

3) Squats are used for strengthening thigh muscles.

14.3

1) Aerobic exercise could be performed in presence of Oxygen.
2) Anaerobic exercise could not be performed without Oxygen.
3) Maximum heart rate is calculated by 220-age.

Note

15

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TESTS AND MEASUREMENTS

Read the conversation between the student and teacher.

Student- Good Morning Sir.

Teacher- Good Morning Rohan.

Student- What is going on Sir?

Teacher- I am measuring student's height and weight

Student- Sir, why do we want to measure height and weight?

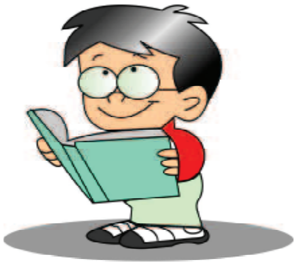
Teacher- It's a part of routine check-up, and its comes under test and measurements.

Student- Oh, can you tell me more what is test and measurement?

Teacher- Test and Measurement is the means by which we can find different abilities and student's current physical condition.

Dear learner, in this lesson we are going to discuss the meaning of test and measurement, what is its need and importance as well as testing procedure of physical fitness components.

OBJECTIVES



After studying this chapter you will be able to:

- explain the meaning of test and measurement;
- explain the need & Importance of test and measurement and
- do the measurement of components of physical fitness.

15.1 MEANING OF TEST AND MEASUREMENT

Test and measurement have a very important role in the field of physical education. Test and Measurement are the means by which we can explore the needs, abilities, qualifications and many other important information of students. The effect of training and coaching can be determined by the test and

Note

measurement. The progress made by the player can be measured and accordingly future plan may be designed. Finally, we can say that it is not possible to achieve the desired goals unless you know the progress. Therefore, knowledge about test and measurement is essential.

Test

A test is a tool having a set of questions and an examination. It is used to measure a particular characteristic of an individual or a group of individuals. It is something which provides information regarding individual's ability, knowledge, performance and achievement

DO YOU KNOW?

According to Barrow and McGee:

"A test is a specific tool or procedure or a technique used to obtain response from the individuals in order to gain information which provides the basis to make judgment or evaluation regarding some characteristics such as fitness, skill, knowledge and values."

A test is a tool which is used to evaluate the physical fitness, skill and performance of a sports person. For example, we use for measuring height- Stadiometer, measuring weight- Weighing Machine, and body temperature- Thermometer

"Test is a specific tool. Procedure or method used to elicit a response from the student in order to gain information as a basis for appraisal of the quantity or quality of elements such as fitness, skill, knowledge and values."

MEASUREMENT

Measurement refers to the process of administration of a test to obtain a quantitative data. It can also be said that measurement aids evaluation process in which various tools and techniques are used in the collection of data.

Note

It is the collection of information in numeric form.

It is the record of performance or the information which is required to make judgment.

DO YOU KNOW?

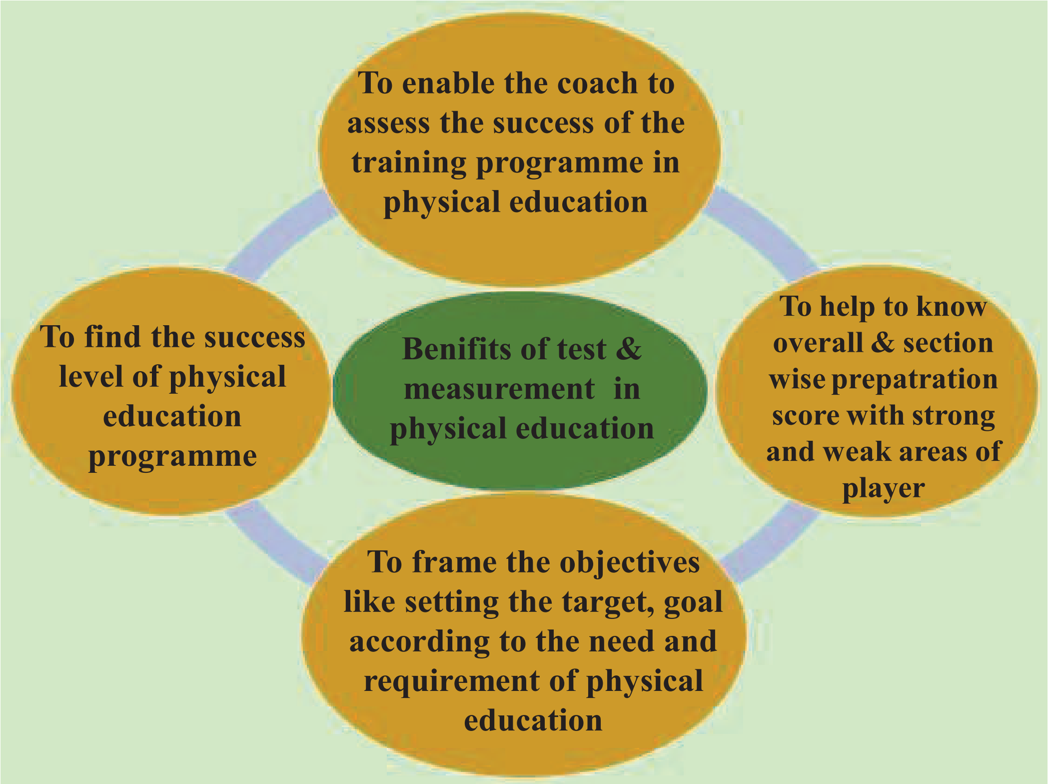
According to R.N.Patel;

"Measurement is an act or process that involves the assignment of numeric values to whatever is being tested. So it involves the quantity of something."

"Measurement is a process by which levels of performance, fitness, knowledge, personality and skill are determined with the help of various standard tests."

15.2 NEED AND IMPORTANCE OF TEST AND MEASUREMENT

- Every Individual has a different quality, capacity, strength and weakness. It helps to select appropriate learning situation according to them.
- To predict potentials and future performance
- To conduct a research and, prepare new norms and standards
- To evaluate the teacher, coach and trainer and their teaching programme and training method.
- To evaluate the learner from time to time and find his or her progress, weakness and current fitness status so that a learner can be placed in to the appropriate training group
- For the purpose of guidance and counselling of an athlete and motivate him to do better



- It helps in classification or gradation of learner and makes it easy for teacher/ coach in selection of athlete
- To diagnose the learning problem of an individual and discover his need
- To find the success level of physical education programme
- To study the individual's development

INTEXT QUESTION 15.1

1) explain the term 'test' as applied in physical education.
2) Explain the meaning of measurement.
3) Fill in the Blanks with appropriate words.

a) A test is a ………………. which is used to evaluate the skill, performance and reliability of task completed by a sports person."

b) Measurement is…………………… of performance or the information which is required to make judgment.

c) To study the individual's development……………………………. of test & measurement.

d) ....is the collection of information of numeric form.

Note

4) **Match the following statement of column A with the facts given in column B in a meaningful manner.**

1) To evaluate the teacher, coach and trainer and their teaching programme/ training method.	**A)** R.N.Patel
2) "Measurement is an act or process that involves the assignment of numeric values to whatever is being tested. So it involves the quantity of something."	**B)** Test and Measurement
3) The effect of training and coaching can be determined by	**C)** Need and Importance of Test & Measurement

15.3 COMPONENTS OF PHYSICAL FITNESS

Physical fitness comprises of 5 components which are as follows:

1) Strength
2) Endurance
3) Flexibility
4) Speed
5) Coordinative abilities.

Note: You will learn definition of the above mentioned components in details in lesson No 3 Physical Fitness and Wellness and Lesson No 4 Sports Training. The practical manual will describe the assessment procedures.

WHAT HAVE YOU LEARNT

- Test and measurement have a very important role in the field of physical education.
- Through measurement we can explore the ability, qualification and important information of students.
- Physical fitness components can be measured by using specific tests.
- Measurement is a process of assigning numeric values to the component which is being tested.

- Component of physical fitness are muscular strength, muscular endurance, flexibility, cardio-vascular endurance.

TERMINAL QUESTIONS

1) Explain the need and importance of test and measurment.

2) Explain the components of physical fitness.

ANSWERS TO INTEXT QUESTIONS

15.1

1. Test may be called as a tool, which is used to measure a particular characteristic of an individual or a group of individuals. It is something which provides information regarding individual's ability, knowledge, performance and achievement

2. Measurement is a process by which level of performance, fitness, knowledge, personality and skill are measured with the help of various standard tests.

3. Fill in the Blanks

   a-Tool**, b-**Record**, c-** Need & Importance**, d-**Measurement**.**

4. Match the following statement of column

   1-C, 2-A, 3-B

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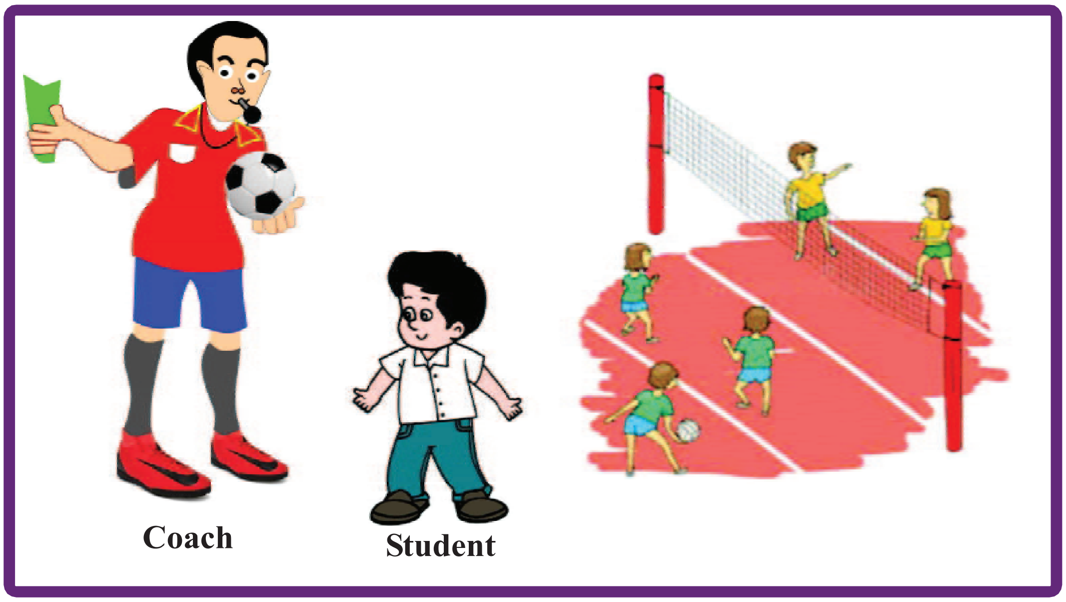
ORGANIZATION OF TOURNAMENT



Read the conversation between student and coach.

Student : Good Morning Coach.

Coach : Good Morning Vikas.

Student : Sir, are we organizing some tournament?

Coach : Yes, Vikas we are Organizing a volleyball tournament.

Student : Can you tell me, what is a Tournament?

Coach : Yes, of course. A Tournament is a series of games or matches that are used to decide the winner of a competition.

Student : Oh!

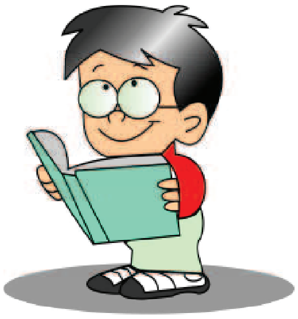
Coach : In sports a tournament is often used at the conclusion of the season to crown the league's champion.

Student : Thank you Coach.

Dear learner, in this lesson you will learn about meaning, definition and importance of tournament, types of tournaments, and how tournaments are conducted.

OBJECTIVES

After studying this chapter you will be able to:



- explain the meaning, definition and importance of Tournament;
- describe the differnt types of tournament and draw fixtures;
- learn how tournaments are conducted and
- describe the intramural and extramural.

16.1 MEANING AND DEFINITIONS OF TOURNAMENT

A tournament is a series of games or matches that are used to decide the winner of a competition. In sports, a tournament is often used at the conclusion of the season to crown the league's champion. Tournaments are usually conducted over a short time period. In addition to sporting events, tournaments are often staged for card games like poker, rummy and bridge. The tournament format indicates the matchups and the criteria for advancement and elimination.

DO YOU KNOW?

According to "John Cannon's Dictionary of British History," tournaments began as military competitions. The first tournament were equestrian and military competitions that were held in Europe at around the year 1000.

"A competition for teams or single players in which a series of games is played, and the winners of each game play against each other until only one winner is left"

"A competition involving many competitors in a single sport or game is Called Tournament"

Participation in a tournament proves player's capabilities.

- Tournament provides an opportunity to demonstrate game skills.
- Tournaments is a powerful medium of popularize a particular game or sports.

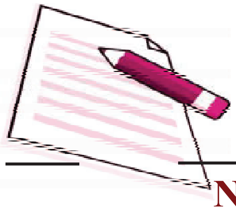
- Tournaments are the greatest source of motivation for further effort and for life.
- Tournaments are a great medium to popularize a particular game and sports.
- Tournaments motivate the people towards the sports.
- Competitions\ and Tournaments provide a healthy entertainment of people.
- Tournaments help the players to monitor the level of their performance and evaluate their standards of achievement
- Participation in a tournament relieves the players.
- Tournament/competitions have become a big money spinner.

Note

16.2 TYPES OF TOURNAMENT

There are various types of tournaments. Some of the important tournament are listed below;

Knock- out Tournaments- In knock-out tournament a team continues to play further matches as per schedule till defeated.



Note

KNOCK-OUT TOURNAMENT

CONSOLATION 1ST & 2ND TYPE
This type of tournament is much better than the single knock-out tournament because loser teams get another chance to play with other losers.

DOUBLE KNOCK-OUT
In this type of tournament every defeated team gets another chance to play with the winner team.

BAGNALL-WILD KNOCK-OUT
This type of tournament is similar to that of knock-out tournament. In it teams are given first, second, third positions.

League Tournaments- In this system a team has to play match with all other participating teams hence the number or matches increase.

LEAUGUE OR ROUND ROBIN TOURNAMENT

Single League Tournaments

in this single league tournament every team has to playwith every other team only one time

Double League TournamentIn

This Double League Tournament, every team/ Competitorplays with every other team/ competitor twice.

Combination Tournament-This type of tournament involves a combination of knock-out and the league system depending upon the suitability of the activity.

COMBINATION TOURNAMRNT

KNOCK-OUT CUM KNOCK-OUT
When many teams participate together in a tournament, then teams are first divided into four equal zones by drawing lots. Consideration may also be shown to their previous performance, if necessary.

KNOCK-OUT CUM LEAGUE
In this type of tournament s, various teams play matches by knock –out system in their zones and then in second phase winner team from each zone plays matches with each other on the league basis

LEAGUE CUM KNOCK-OUT
In this type of tournament, the procedure is reverse of the knock-out, cum league.

LEAGUE CUM LEAGUE
In this type of competitions all the participating teams play matches within their zone on the league basis.

Note

Challenge Tournament- In this method lower seeded players give challenge to higher seeded player. Thus challenge round goes till the last player. These types of tournament are usually organized for Wrestling, Table tennis, Badminton, Archery , Squash etc.

CHALLENGE TOURNAMENT

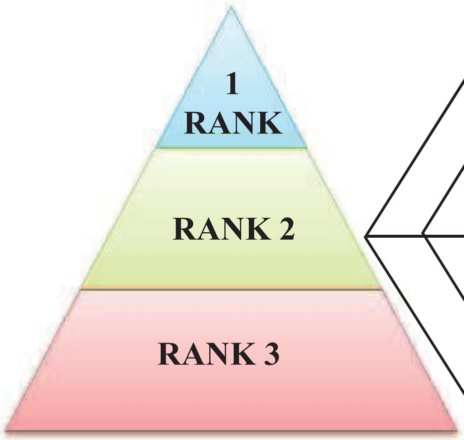
LADDER TYPE
Ladder type tournament is used to give ranking in individual games like Boxing, judo, table tennis, Badminton etc.

PYRAMIDTYPE
This is an improved version of ladder method/ system type tournament.

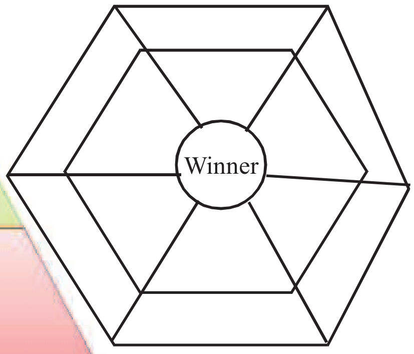
SPIDER WEB TYPE
In this method five or six pyramids are interrelated to form a spider web system.

Places	Players	Places
1	A	
2	B	
3	C	
4	D	
5	E	
Places		Places

Ladder Type



Pyramid Type



Spider webType

DO YOU KNOW?

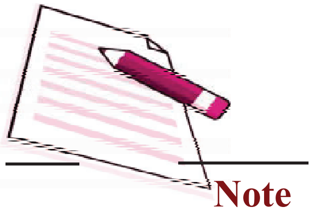
RANK 3's player can challenge the player of rank 1or rank 2 If he wins then the ranks of both the players will change among themselves.

INTEXT QUESTION 16.1

1. Explain the meaning of tournament.

....

....



2. List down the types of tournament.

 ....

3. Explain the importance of tournament.

 ....

4. Explain round robin tournament.

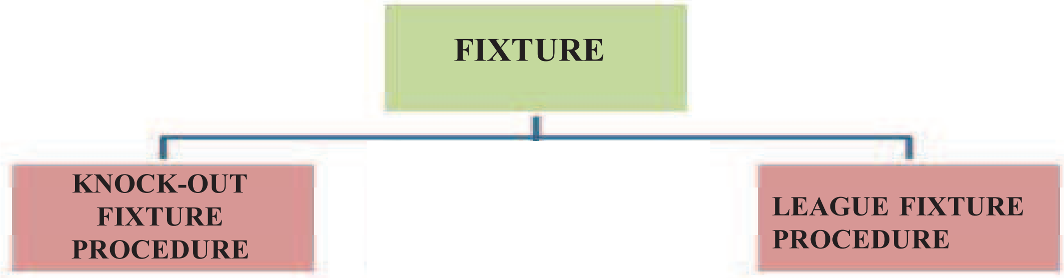
 ....

16.2.1 Procedure to Draw of Fixture

WE CAN SAY

"Fixture is a planned process of a tournament to be played. Fixture may be defined as schedule of the teams taking part in the tournament and the methods of deciding the course of competition".

Here we will discuss two types of main fixture procedure

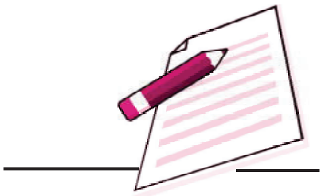


Knock-out Fixture Procedure- In this type of fixture a team will be eliminated immediately after defeat. It has less number of matches as compare to other types of fixture procedure, thus easy to conduct

DO YOU KNOW?

The success of the tournaments fully depends upon suitable fixture. Tournaments are played in various forms of fixture. Setting up the fixture means, making arrangement of competitions among teams.

"Fixture is a process of arranging the teams in systematic order in various groups for competitive fights for physical activity"



Note

16.2.2 Procedure of Knock-out Fixture

First we have to determine the number of teams in upper half and lower half:

In case of even number of teams:

Teams in upper half will be: $-\dfrac{n}{2}$

For 12 Teams

Teams in upper alf $= \dfrac{n}{2} = \dfrac{12}{2} = 6$

Means, there will be 6 teams in upper half and 6 team in lower half

In case of odd number of teams:

Teams in upper half will be: $\dfrac{n+1}{2}$

Teams in lower half will be: $\dfrac{n-1}{2}$

For 13 Teams

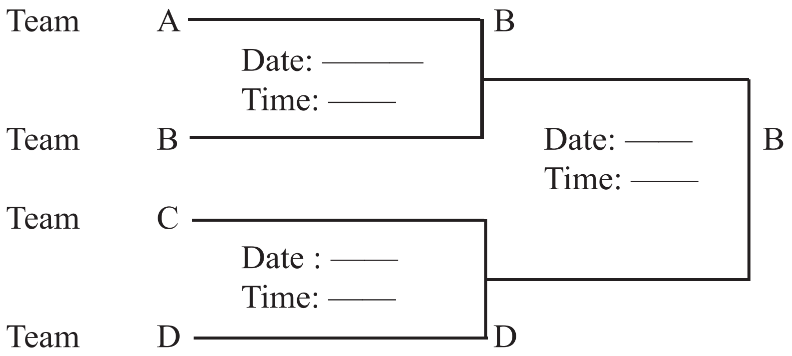
Teams in upper half $= \dfrac{n+1}{2} = \dfrac{13+1}{2} = \dfrac{14}{2} = 7$

Teams in lower half $= \dfrac{n-1}{2} = \dfrac{13-1}{2} = \dfrac{12}{2} = 6$

Means, there will be 7 teams in upper half and 6 teams in lower half

If number of teams are 2,4,8,16,32, ….then there is no need of 'bye'.

i) Total Number of teams = 4



Exploration : Match between A Vs B won by B

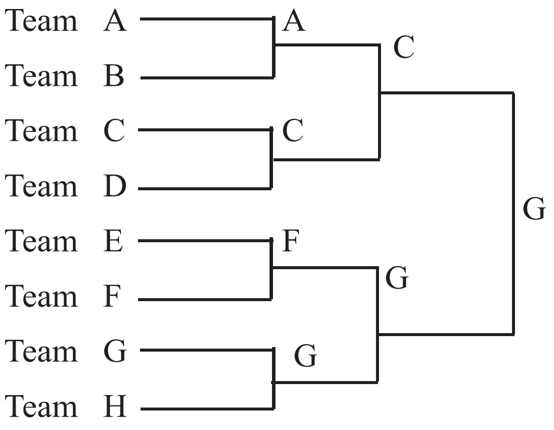
Match between C Vs B won by D

Final match held between B Vs D won by B

Round I Round II

Note

ii) Total Number of Team = 8



Explanation Match between A Vs B won by A in Round one

Match between C Vs D won by C in Round one

Match between E Vs F won by F in Round one

Match between G Vs H won by G in Round one

Match between A Vs C won by C in Round Two

Match between F Vs G won by G in Round Two

Final Match between C Vs G won by G in Finals

Bye is advantage to a team to exempt to play first round, generally given by drawing lots system.

If the number of teams are not the lower of 2 (Two) then we will follow different method.

we have to determine the "Byes"

Formula of bye: = Next power of two from total number of teams – total number of teams

Example:

Next power of two from total number of teams	total number of teams	Number of Byes
8	7	1
16	11	5
32	21	11

Allotment of byes to teams

First bye will be given to last team of lower half, Second bye will be given to first team of upper half. Third bye will be given to last team of first half and fourth bye will be given to first team of lower half. After that same pattern will be followed.

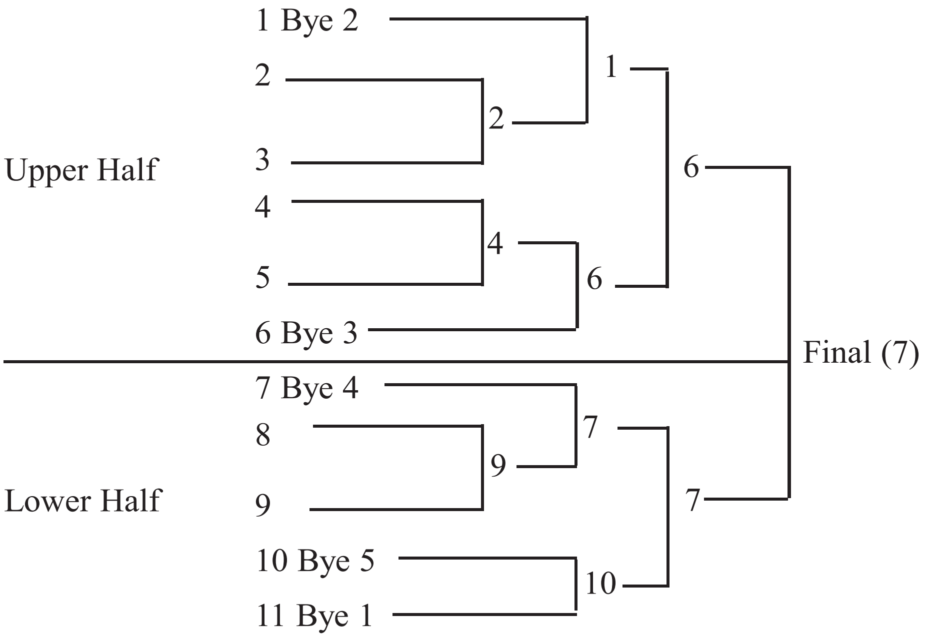
Note

Total Number of team = 11 (Odd Number)

Total Number of team in Upper half = $\frac{n+1}{2} = \frac{11+1}{2} = \frac{12}{2} = 6$

Number of byes : 16 – 11 = 5

Teams R_1 R_2 R_3 Finals

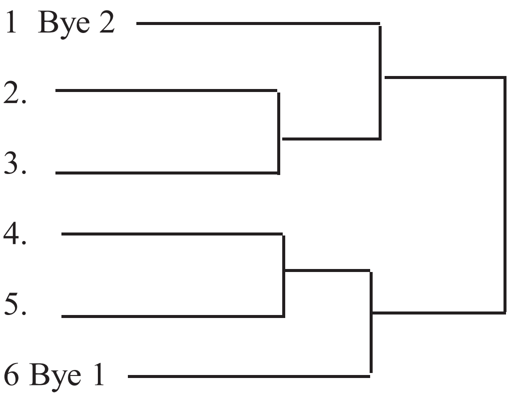


Total Number of Teams = 6 (Even Number)

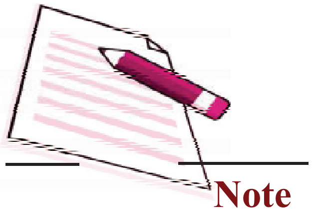
Number of teams in upper half = $\frac{n}{2} = \frac{6}{2} = 3$

Number of byes : 8 – 6 = 2

Teams R_1 R_2 Finals

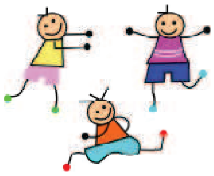


R = Round



Note

Advantage of knock-out Fixture Procedure

Less Expensive	**Less Time needed**	 **Less tiredness to players**	**number of organizers required**

Disadvantage of Knock-out Fixture Procedure

High Stress on Players	**Good Team May Eliminated**	**Selection of Players is diûcult**

DO YOU KNOW?

"BYE": - A bye is a special privilege given to a team in the initial rounds because of which it gets exempted from playing in the ûrst round and directly enters the second round.

Seeding: - Seeding is given to some special teams or those teams which are winner/runner up teams of the last year's tournament.

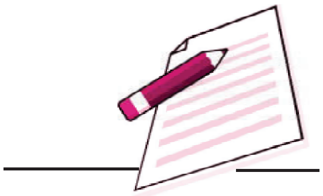
Special seeding: - In this type if seeding the seeded players are brought straight away to quarterûnals or semiûnals.

16.2.3 Single League or Round Robin

In single League or Round robin fixture every team will play with every team of the tournament.

Formula to determine the number of matches (7 teams):

Total number of matches= $n(n-1)/2 = 7(7-1)/2= 7(6)/2= 42/2= 21$ matches



Ist Round	2nd Round	3rd Round	4th Round	5th Round	6th Round
A-B					
A-B	B-C				
A-B	B-D	C-D			
A-B	B-E	C-E	D-E		
A-B	B-F	C-F	D-F	E-F	
A-B	B-G	C-G	D-G	E-G	F-G

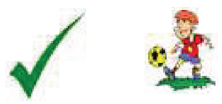
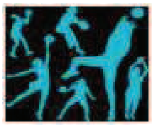
League Fixture procedure:- In this type of fixture each team plays with every other team at least once if it is single league fixture procedure tournament but in case of double league fixture procedure tournament, every team plays without consideration of winning or defeat in a match.

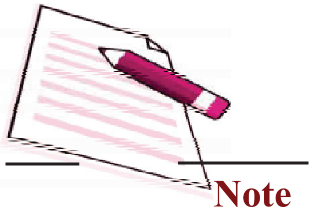
Fixture of 7 teams in Single League tournament where teams are represented by alphabets A to G. The number of matches are 21. For winning team is given 2 points, for loss no point and for draw 1 point is awarded. AGerward final score is compared to decide winner of tournament.

ACTIVITY 16.1

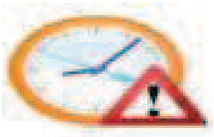
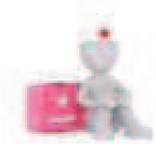
Make a league fixture of 8 teams

Advantage of league fixture Procedure

 Selection of Skilled Players is very easy	Strong Team Can Win	 Players Interest	Overcome lacking



Disadvantage of League Fixture Procedure

 Time Consuming	 Lot of Injuries	Complicated scoring	Less interest players and Spectators

INTEXT QUESTION 16.2

1. Explain the advantage of knock-out fixture.

   ....

2. What is Seeding?

   ....

3. What is special seeding?

   ....

16.3 HOW TO CONDUCT A TOURNAMENT

Pre-Tournament Preparation	A-After finalizing the event we also prepare a budget and finalizing the dates and venues. B-Arrangement of the equipment and playfields. C-To provide information of the tournament to the participating teams. D- Make the fixture and events rules and regulations. E-Accommodation arrangement for students & referees. F-Arrangement of trophies, Medal, Certificate etc., G-Arrangement of transportations
During - Tournament Preparation	A-Check all the equipment, ground facilities before starting the events. B-Check all players' eligibility of players and other officials. C-Provide first- aid to injured players. D-Prepare matches result, score sheet or press release. E-Supervise and check smooth working officials & matches conducted on fixture bases. F-Provide refreshment, meals, transportation to officials and players. G-Check and maintain discipline among spectators.

Note

Post-Tournament Preparation	A-Check the departing teams, refund security money and other related documents. B-Present the Medal, Merit certificate, Trophy to the position holder's players. C-Make the payments of officials and other bodies. D-Returns the borrowed things to the concerned ones. E-Make a final press release report. F-Make a final event report and present to authority. G- Distributing the certificate of participating team.

INTEXT QUESTIONS 16.3

1) Fill in the Blanks

   a) Ladder type tournament is type of ……………………………….....

   b) Knock out – cum league tournament is the type of…………………

   c) Double league tournament is the type of …………………………

   d) Consolation 1st and 2nd type tournament is the type of ……………

2) Match the following statement of column

1- Provide the opportunities to demonstrate game skill	**A-** These types of tournament are usually organized for Wrestling, Table Tennis, Badminton, Archery, Squash etc.
2- Combination tournaments	**B-** This type of tournament involves a combination of knock-out and the league system depending upon the suitability of the activity.
3- League cum knock-out tournaments	**C-** Importance of tournament.
4- Challenge tournaments	**D-** Type of tournaments

Note

16.4 INTRAMURAL

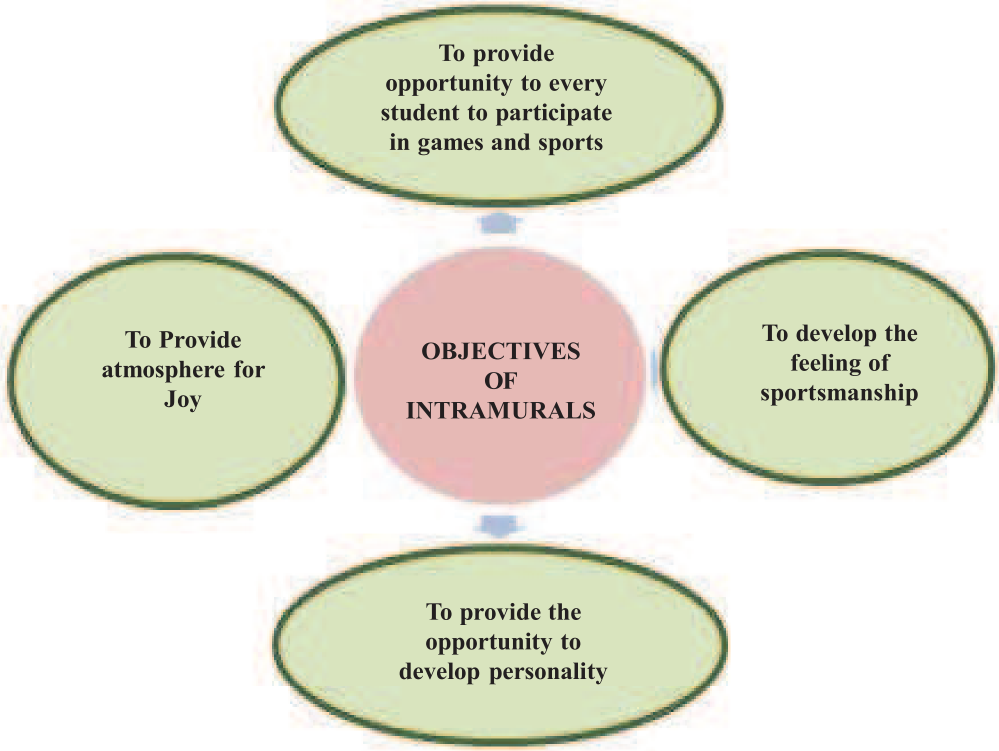
The word "Intramural" is a combination of two Latin words "intra" and "murus ". Intra meaning is 'within' and Murus meaning is 'wall'. Intramurals activities should form the basis of all programmes and competitions. All students should be provided opportunities to compete regardless of their skills. Intramurals received the major attention as part of physical education programme of a school. The intramurals programme may also be viewed from a different angle. Intramurals should be under the direction of the physical education department of a school; and participation of the student may be taken as taking part in general activities such as music, debate, dance, public speaking, and dramatics. Few of intramural level competitions like Inter-Class, Inter-House, and Inter-Hostel etc.

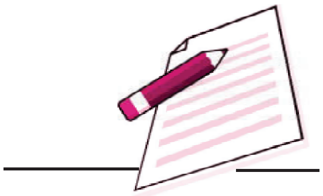
Do you know

DO YOU KNOW?

"A game for each and each for a game" may be taken up as its motto.

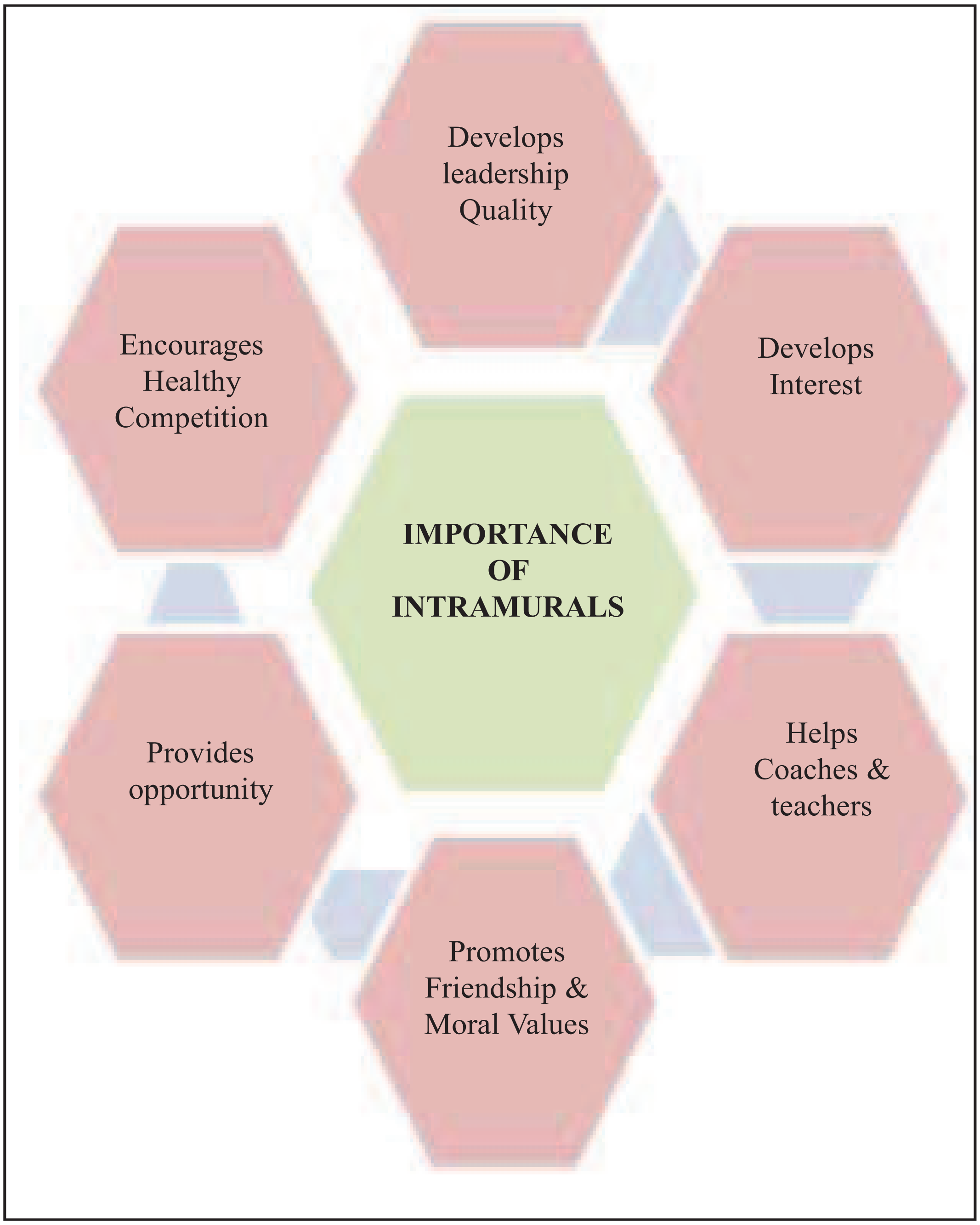
Objectives of Intramural





Note

Importance of Intramural



16.4.1 Extramural

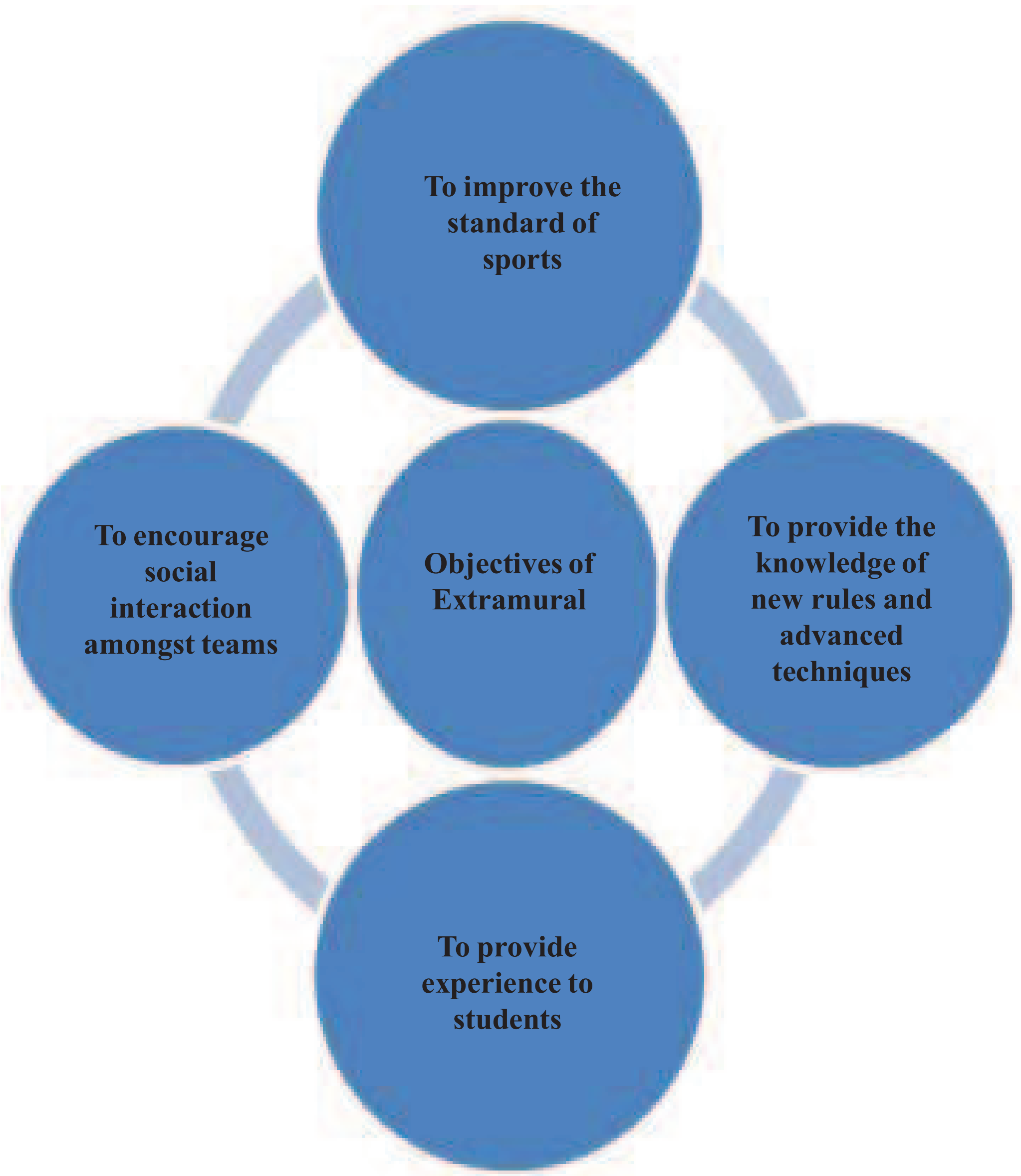
Extramural sports would involve competitions with teams outside of your own institution or school". Extramural competitions are to find the talented players and to give exposure to good player at upper level. Few of extramural competitions like Inter -school, Inter-college, Inter-District, State, and National and Inter-National level.

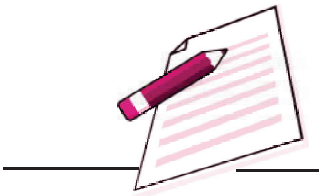
Note

DO YOU KNOW?

The word "extramural' is also a Latin word "Extra" meaning "Outside" or "beyond" the wall.

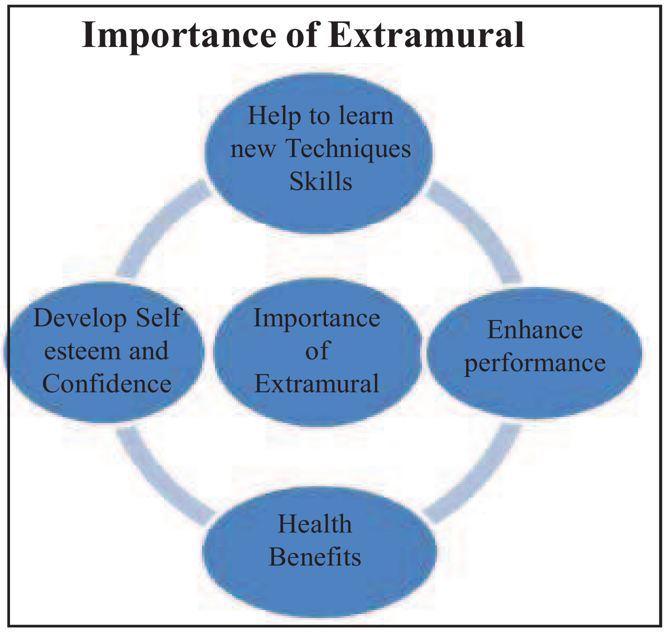
Objective of Extramural





Note

Difference between Intramural and Extramural



Intramural	Extramural
Intramural competitions are organized by the school, college, Institute within the campus of the institute, college, school.	**Extramural** competition are not organized by the school/ college/ institute/associations, amongst school/ institution/ college
Intramural competition is very easy to manage.	**Extramural** is tough to manage as compared to intramural.
Intramural no students of other school can participate in this activity.	**Extramural** competition the students of other school also participate in competition. It is also inter - school competition.
Intramuralcompetitions large number of students are know each to other.	**Extramural**competitionmostof the students are not know to each other.

INTEXT QUESTION 16.4

1. Define intramurals.

....

2. Define extramural.

....

Fill in the Blanks

3. i) Inter-District tournament is type of ....

   ii) Inter class tournament is the type of ....

   iii) Intramural competition develops .... quality.

4. Match the statements of column 'A' with the statements of column'B' in a meaningful way.

1) Intramural Competition	A) Most of the students are not known to each other.
2) Extramural Competition	B) Very easy to conduct
3) To encourage social interaction among the teams	C) Intramural Competition
4) Competition needs less time and funds to organize competition	D) Objective of Extramural Competition

WHAT YOU HAVE LEARNT

- There are four types of tournament like knockout tournament, league or round robin tournament, combination and challenge tournament.
- How to organize tournament and steps of organizing tournament.
- Intramural activity is organized in school between classes or houses
- Extramural activity is organized between different-different schools/ institution
- Fixture is a planned process of a tournament to be played
- Types of fixture, knockout, league or ladder and advantage or disadvantage of all types of fixture.

TERMINAL QUESTIONS

1. Make a knock –out fixture of 13 teams.
2. Make a league fixture of 12 teams.
3. What do you mean by tournament? Explain the importance and types of tournament.

4. What is intramural tournament? Describe how to conduct a sports event in a school.

5. Explain the various types of ûxture and describe the duties of various committees in the sports event.

Note

ANSWER TO INTEXT QUESTION

16.1

1. Tournament is a series of games or matches that are used to decide the winner of a competition.

2. i) Knock out tournament

   ii) League tournament,

   iii) Challenge tournament,

   iv) Combination Tournament.

3. i) Tournament provides an opportunity to demonstrate games skill,

   ii) Tournament motivate the people towards sports

4) In league or round robin tournament system a team has to play match with all the other participating team, hence the number of matches increase.

16.2

1. Advantage of knockout fixture:-

   1. Less expensive

   2. Less time needed

   3. Less tiredness to players

   4. Less number of organizers required

2) Seeding: seeding is given to some special teams or players those teams/ players which were winner/ runner- up of the last year tournament.

3) Special Seeding: special seeding means the seeding players are brought straight away to quarter final.

16.3

1. Fill in the blanks

   a. Challenge Tournament,

   b. Combination Tournament,

   c. League Tournament,

   d. Knock-out Tournament.

2. Match the following –

   1. C

   2. D

   3. B

   4. A

16.4

1. The word 33Intramural33 is a combination of two Ltin words 33intra33 and 33murus33. Intra meaning is 3within3 and Murus meaning is 3wall3. Intramurals activities should form the basis of all programmes and competitions.

2. 33Extramural sports would involve competitions with teams outside of your own institution or school33.

3. (i) Extramural (ii) Intramural (iii) Leadership

4. 1(B) 2(A) 3(D) 4(C)

Note

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17

ATHLETIC INJURIES, FIRST AID AND SAFETY

Read a conversation between Ram and his PE Teacher, held at school sports field

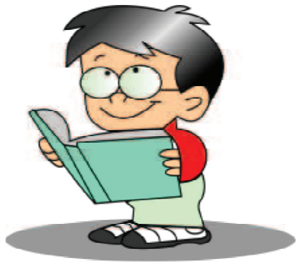
Ram : Sir! When we get injured while playing, what are we suppose to do in emergency?

Sir : We should focus on First Aid which can be provided to the injured person.

Ram : What is First Aid? And how is it given to the injured?

This made the teacher to think about the need to provide knowledge about First Aid to the school students, so that they can help each other during emergency cases and also help themselves better. In this Lesson you will read about the Athletic injuries, concepts of First Aid, how to prevent injuries and also about safety measures at school, home, road and sports field.

OBJECTIVES



After reading this lesson, you will be able to:

- classify the different types of injuries in sports;
- learn about the treatment of injuries;
- comprehend the principles of First Aid;
- apply preventive and safety measures to avoid injuries in sports field and outside and
- discuss the safety precautions.

17.1 DIFFERENT TYPES OF SPORTS INJURIES

You all know that participating in physical activity, sports, exercise and recreational programs are enjoyable but they are also prone to injuries if not taken care of. We need to learn that injuries are unavoidable in sports, therefore, the focus must be on injury management and rehabilitation and care of the injured. You will enjoy learning about the occurrence of injuries and their management.

Note

Injury occurs when force exceeds the limit of tissue due to which there is damage to cells and blood vessels. Injury may occur due to any stretch or blow on the muscles leading to soft tissue injuries like strain or sprain. Damage to cell is called as cell necrosis due to which it cannot transport oxygen, nutrients and waste, leading to necrosis around the area of impact and further leading oedema. Blood vessel damage due to injury causes decrease in blood flow and coagulation (clotting).

17.1.1 Types of Injury

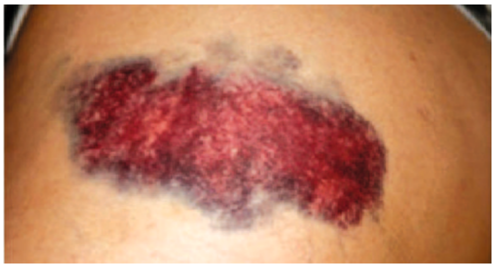
Its important to detail the different types or classification of injuries in sports on the basis of its nature and location.

Types of Injuries

Soft Tissue Injury	Bone Injury		Joint injury
	Close Fracture	**Open Fracture**	**Dislocation**
• Contusion • Abrasion • Incision • Laceration • Strain • Sprain	• Transverse Fracture • Oblique Fracture • Spiral Fracture • Comminute Fracture • Impact Fracture • Green Stick Fracture	• Compound Fracture	• Subluxation • Luxation

17.1.2 SOFT TISSUE INJURY

Contusion: Direct impact with blunt object which causes bleeding deep with muscles due to damage in capillaries. Wound look like bluish in color due to torn blood vessels



Abrasion: Loss of epidermis (Outer layer of the skin) superficial injury with loss of skin. Person feels burning sensation.

Incision: Cut on arteries, tendon, veins, nerves due to sharp objects

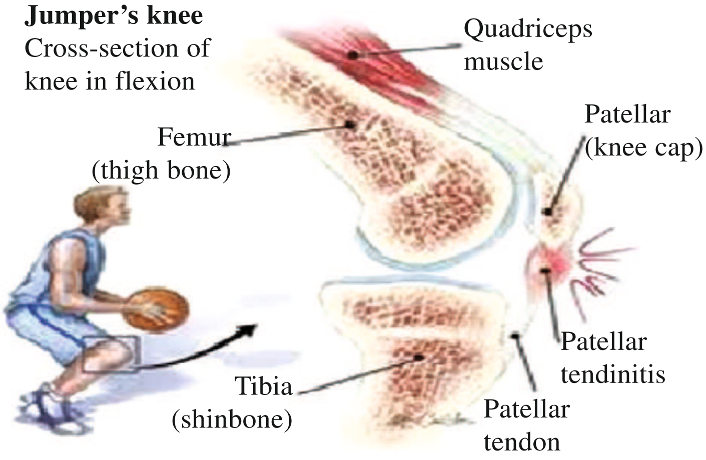
Laceration : Irregular tear in skin, cut in epidermis and dermis with blunt edge objects. An individual feel severe pain and redness beyond the wound edges.

Strain : Overstretching and tearing of muscle units is known as strain. Symptoms inclues localized inflammation, severe pain etc.

i. Grade I: Mild – slightly pulled

ii. Grade II: Moderate- Tear of fibre

iii. Grade III: Sever – Rupture of muscle



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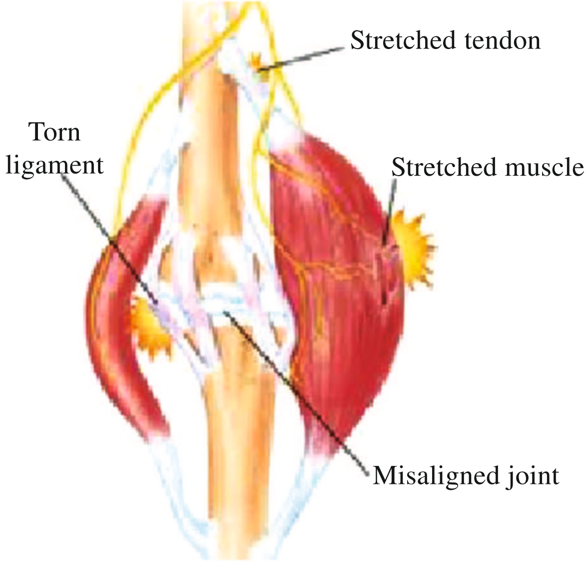
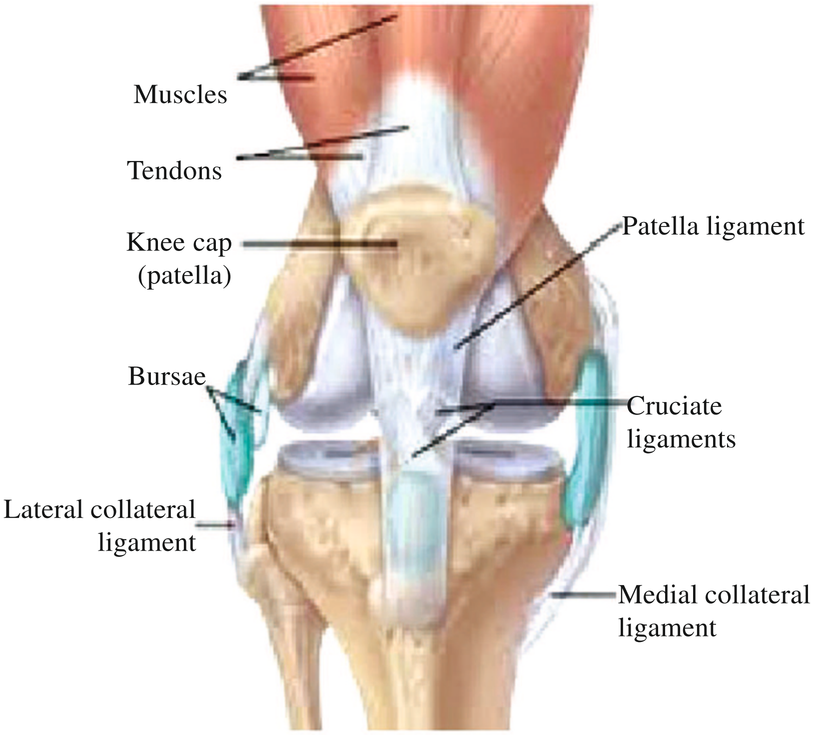


Sprain: Overstretching and tearing of ligaments is known as sprain. Symptoms inclues Pain, Tenderness, Loss of Function

i. Grade I: Stretching or minor tear of one or more ligaments

ii. Grade II: Partial tearing resulting in weakness or some loss of function

iii. Grade III: Extensive tearing or complete rupture of ligaments generally require surgery.



Note

17.1.3 BONE INJURY

Fracture: It is a complete or incomplete break in a bone or discontinuation of bone resulting from the application of excessive force

a. **Close Fracture**: A **closed fracture** is when the bone breaks but there is no puncture or open wound in the skin

   i. **Transverse Fracture:** Broken at right angle to long axis of bone. *Transverse fractures of long bones* are usually the result of direct impacts, and thus are more common in older children after sports injuries.

ii. **Oblique Fracture:** A fracture in which the line of break runs in oblique direction to long axis confined to one plane. It is a slanted fracture of the shaft along the bone's long axis.

iii. **Spiral Fracture:** Occur when one end of an extremity is fixed (e.g., a foot is planted on the floor) but the rest of the extremity remains in motion.

iv. **Comminute Fracture: A fracture in which the bone has broken or fragmented into several pieces**. It happens mostly due to crush.

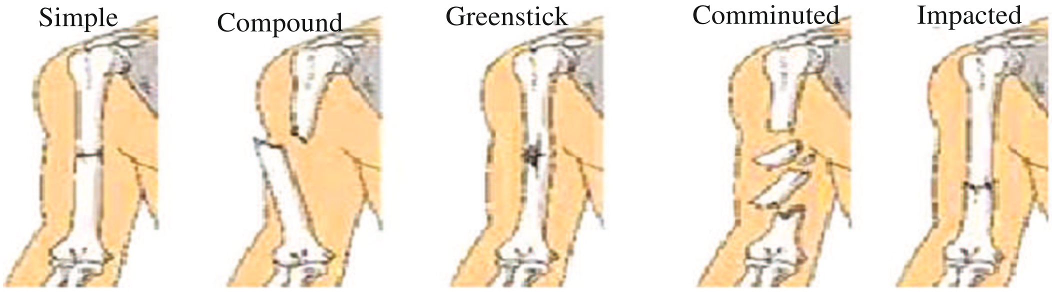
v. **Impact Fracture:** An impacted fracture is one whose ends are driven into each other. This is commonly seen in arm fractures in children and is sometimes known as a buckle fracture

vi. **Green Stick Fracture:** An incomplete fracture in which the bone is bent, it occurs most often in children in which the bone bends and partially breaks

b. **Open Fracture**: An **open fracture** is one in which the bone breaks through the skin.

i. **Compound Fracture:**is an injury that occurs when there is a break in the skin around a broken bone. In order for an injury to be classified as a compound fracture, the outside air (and dirt and bacteria) must be able to get to the fracture site without a barrier of skin or soft-tissue. Therefore, a bone does not need to be through the skin in order for the injury to be called a compound fracture.

Types of Fractures



17.1.4 JOINT INJURY

a. ***Dislocation***: When bones shifted their place from normal position, do not meet properly at the joint is known as dislocation. It can be divided into two types :

i. Subluxation: There is partial dislocation in joints where slight displacement of bones takes place.

ii. Luxation: There is complete dislocation where bones completely separate from each other

17.2 TREATMENT FOR SIMPLE SPORT INJURIES

There are four steps to be taken care of common sports injuries.The process is known as R I C E which consists of foursteps. This process should be started as soon as an injury occurs.In RICE, Rstands for REST,I stands for ICE, C stands for COMPRESSION, and E stands for ELEVATION.

Rest

An individual should immediately stop the activity as soon as an injury occurs. Delay may further damage the injured part. Rest must be taken until injured part gets fully recovered.

Ice

Ice or cold water should be put on to the injured part as soon as possible to control swelling. It will help to decreases muscle spasm and also decreases of pain. Cold water or ice should be applied for 20-30 minutes after gap of 2-3 hours till 48 -72 hours.

Compression

Compression helps to limit and decrease swelling in the injured area. It should be applied with cold treatment. Compression can be done through elastic wrap of tape or belt but should not too tight to stop circulation, or too loose to allow further swelling.

Elevation

Last step of the process is to elevate the injured part. During the process support should be placed under the entire limb. The height should be enough that high above from the heart.

Note

The process of RICE should be continued for at least 48-72 hours. Any form of heat should not be applied under any circumstances, during this time otherwise it will leads to swelling and inflammation. In the process of optimal healing proper nutrition, good amount of sleep and a positive attitude is required.

DO YOU KNOW?

Cartilages: fibrous connective tissue placed over ends of the bones that allow smooth movement, absorb impacts. Any tear or break of cartilages is cartilages injuries.

Bursae: they are small sacs of fluid within joint to reduce friction. Bursitis occurs due to infection or overuse.

Ligaments: connective tissues that connect one bone to another bone is known as ligaments. Any tear or stretch of ligament known as sprain.

Tendons: connective tissues that connect muscle to bone known as tendons. Rupture or strained on tendons known as tendonitis.

ACTIVITY 17.1

Make a list of common injuries occurring in your favourite sport.

INTEXT QUESTION 17.1

1. Muscular tendon injury is known as

   ....

   ....

2. Injury to ligament is called as

   ....

   ....

3. Discontinuation of the bone due to impact, causing breakage of bone is called as?

   ....

   ....

4. Damage to cell causing death is called as

   ....

....

5. Outer layer of skin is known as

....

....

17.3 FIRST AID

It is the immediate assistance given to the person suffering from sudden injury or illness. The objective of first aid is to provide immediate care to the injured or ill person to preserve life and protect casualty from further harm before he reach to competent and qualified medical person or medical institution. First aid must be given by the first aider only, otherwise results may be adverse.

First aid box

It is a handy box which contains following items by the first aider:

- Bandages
- Antiseptics
- Cotton balls and swabs
- Saline
- Hydrogen peroxide
- Iodine
- Dressings
- Eye wash
- Disposable gloves
- Scissors
- Adhesive Bandages
- Thermometer

ACTIVITY 17.2

Prepare a First Aid Box with essential items required and stick a list of items along with its expiry date on the top of the box.

Note

Note

17.3.1 Principles of First Aid

Read aloud the following principles of first aid :-

Immediate action

First step is to form the action plan immediately, first aider must be quick, quiet and without panic.

Calling for medical assistance

First aider should inform nearest medical unit with fastest possible means of communication. Patient can be transferred to the ambulance and can come off the place of injury or illness.

Medical alert devices

Individual having prolonged disease sometime take alert devices in which their history of disease or injury including specialist medical contact is mentioned.

Reassurance and mental health

Psychological values of reassurance are equal as treatment. Some individual go into shock and make situation more worsen. First aider should reassure them in order to reduce tension.

Your response to an emergency

There are different types of emergencies in which individuals react differently. Sometime their response of disaster or injury may result in crying, fear, anxiety etc. it may last for weeks. By talking positive approach it can help to cope with injury.

Common causes of injuries

There are number of common risk factors that can lead to Athletic injuries.

1. Lack of Warming up and Cooling down.
2. Overtraining or Excessive loading on the body
3. Non safety precautions
4. An accident
5. Inappropriate equipment

6. Poor exercise techniques
7. Muscle weakness or imbalance
8. Joint laxity
9. Incomplete Calcification
10. Aging

INTEXT QUESTION 17.2

1. Mark the following as True/False.

   a. First aid must be given by the trained first aider only

   b. PRICE is not important in sports injury recovery

   c. Warming-Up is not a reason for injury during sports participation

   d. It is essential to be hydrated to prevent injury

   f. Safety equipment are essential in sports to prevent injury.

17.4 PREVENTION OF SPORTS INJURY

Basic physical fitness

General fitness is important before indulging in any kind of activity. Bones and muscles must be strong enough to perform the activity effectively without having fatigue.

Equipment

The equipment must be carefully chosen to meet the demand of sport. The safety and technical equipment must be double checked in terms of quality before use. Comfortable and appropriate equipment is the prerequisite for any leisure and performance oriented activity.

Health

If somebody has suffered from infection or cold or other kind of disease, then he should not be involve in any physical activity. After suffering from disease, the body becomes weak the response from body goes slow, the chances of injury increase.

Note

Warming up and cooling down

Before any type of physical activity an individual must do warming up with a purpose to increase temperature, mobility of muscles and mental preparedness. After activity, cooling down must be done to lowering down the temperature of the body and further stretch the muscles to prevent injuries.

Systematic and scientific training

Systematic and scientific training is important to bring effective training results. Training schedule should be prepared by the competent person.Unscientific training leads to injuries.

Safety measures

All the protective gears must be carefully checked. Surface of playing area, equipment, first aid, rule and regulations should be strictly followed.

Psychological considerations

Before and after activity psychological training is required. Mental readiness, alertness, confidence, make up of mind, memory etc. are the factors to be addressed before training to reduce injuries.

INTEXT QUESTIONS 17.3

Match the following

	A		B
1.	P in PRICE stands for	i.	Thermotherapy
2.	Wax Bath	ii.	Prevention
3.	Ice Pack	iii.	Cryotherapy
4.	E in PRICE stands for	iv.	Safety Equipment
5.	Helmet	v.	Elevation

17.5 SAFETY PRECAUTIONS

School Safety: “School Safety” has been defined as creating safe environment for children, starting from their homes to their schools and back. This includes safety from any kind of abuse, violence, psycho-social issue, disaster: natural and manmade, fire, transportation (NCPCR, 2017)

Note

School Sports Injury Prevention:

1. **Know and abide by the rules of the sport.** Kids should also be instructed in how to use the sport's athletic equipment properly.

2. **Avoid playing when very tired or in pain.** Children should take a break immediately if in pain.

3. **Keep kids hydrated.** Make sure there is adequate water or other liquids to maintain proper hydration. Kids need to drink 8 ounces of fluid every 20 minutes, plus more after playing.

4. **Wear appropriate protective gear,** such as shin guards for soccer, a hard-shell helmet when facing a baseball or softball pitcher, a helmet and body padding for ice hockey. Make sure your child uses the proper protective gear for a particular sport. This may lessen the chances of being injured.

5. **Make sure the coach is certified.** Enrol your child in organized sports through schools, community clubs, and recreation areas where there may be adults who are certified coaches. Ask about the coach's background and training.

6. **Get a pre-season physical examination.** Kids should have a thorough exam from a physician before participating in sports, including a cardiovascular workup to make sure there are no pre-existing conditions.

7. **Insist on a team emergency plan.** What happens if a child is injured? Where's the first-aid kit? Who drives to the hospital? Make sure any injured child sees a doctor right away.

DO YOU KNOW?

Supreme Courts Directive on School Safety Norms in India in a significant ruling, the Supreme Court ordered that no new government or private school would be given affiliation if the building did not have fire safety measures and earthquake resistant structure. Pained by the heart-rending death of 93 children in a fire at a Kumbakonam school in Tamil Nadu five years ago, a Bench comprising Justice H Dalveer Bhandari S Bedi said, "Children cannot be compelled to receive education from an unsound and unsafe building." Referring to painful incidents involving death of school children due to fire in Kumbakonam as well as Dabwali in Haryana in 1995, the Bench said,

"It has become imperative that safety measures as prescribed by the National Building Code of India, 2005, be implemented by all government and private schools functioning in our country." The other directions to all state governments are:

- All existing government and private schools shall install fire extinguishing equipment within a period of six months
- School buildings are to be kept free from inflammable and toxic material or stored safely
- Evaluation of structural aspect of the school building must be carried out periodically
- School staff must be well-trained to use the fire-extinguishing equipment

source: http://indiankanoon.org/doc/232115

INTEXT QUESTIONS 17.4

1. Mark the following as True or False

   a. Qualified and certified coaches are essential for safety of players ( )

   b. Equipments should be tested regularly ( )

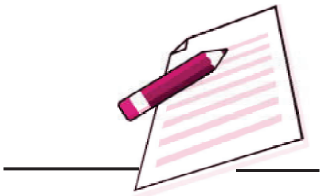
   c. Medical report of student before physical exercise or sports participation is essential ( )

   d. Over exertion of activity should be avoided during school sports activity ( )

   e. Abide by rules of sports is essential for injury prevention ( )

WHAT HAVE YOU LEARNT

- Injury occurs when force exceeds the limit of tissue due to which there is damage to cells and blood vessels.
- Injury may occur due to any stretch or blow on the muscles leading to soft tissue injuries like strain or sprain
- The objective of first aid is to provide immediate care to the injured or ill person to preserve life and protect casualty from further harm



Note

- First aider should inform nearest medical unit with fastest possible means of communication. Patient can be transferred to the ambulance and can come off the place of injury or illness
- General fitness is important before indulging in any kind of activity.
- School Safety" has been defined as creating safe environment for children, starting from their homes to their schools and back.

TERMINAL QUESITONS

1. Describe sports injury and its classifications.
2. Explain the principles of FIRST AID.
3. Describe PRICE protocol.
4. How can we prevent sports injury among children?
5. Detail the points for Safety of children at school during sports.

ANSWERS TO INTEXT QUESTIONS

17.1

1. Strain
2. Sprain
3. Fracture
4. Cell Necrosis
5. Epidermis

17.2

a. True

b. False

c. False

d. True

e. True

Note

17.3

1. Prevention - (ii)
2. Thermotherapy - (i)
3. Cryotherapy - (iii)
4. Elevation - (v)
5. Safety Equipment - (iv)

17.4

a. True

b. True

c. True

d. False

e. False

Note

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17

ATHLETIC INJURIES, FIRST AID AND SAFETY

Read a conversation between Ram and his PE Teacher, held at school sports field

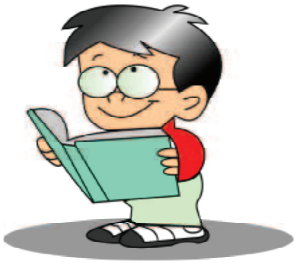
Ram : Sir! When we get injured while playing, what are we suppose to do in emergency?

Sir : We should focus on First Aid which can be provided to the injured person.

Ram : What is First Aid? And how is it given to the injured?

This made the teacher to think about the need to provide knowledge about First Aid to the school students, so that they can help each other during emergency cases and also help themselves better. In this Lesson you will read about the Athletic injuries, concepts of First Aid, how to prevent injuries and also about safety measures at school, home, road and sports field.

OBJECTIVES



After reading this lesson, you will be able to:

- classify the different types of injuries in sports;
- learn about the treatment of injuries;
- comprehend the principles of First Aid;
- apply preventive and safety measures to avoid injuries in sports field and outside and
- discuss the safety precautions.

17.1 DIFFERENT TYPES OF SPORTS INJURIES

You all know that participating in physical activity, sports, exercise and recreational programs are enjoyable but they are also prone to injuries if not taken care of. We need to learn that injuries are unavoidable in sports, therefore, the focus must be on injury management and rehabilitation and care of the injured. You will enjoy learning about the occurrence of injuries and their management.

Note

Injury occurs when force exceeds the limit of tissue due to which there is damage to cells and blood vessels. Injury may occur due to any stretch or blow on the muscles leading to soft tissue injuries like strain or sprain. Damage to cell is called as cell necrosis due to which it cannot transport oxygen, nutrients and waste, leading to necrosis around the area of impact and further leading oedema. Blood vessel damage due to injury causes decrease in blood flow and coagulation (clotting).

17.1.1 Types of Injury

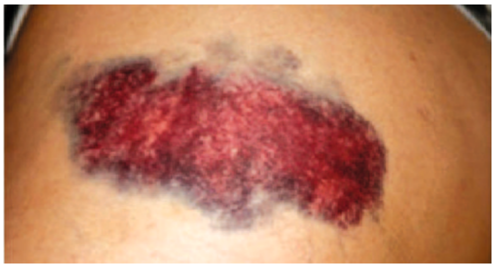
Its important to detail the different types or classification of injuries in sports on the basis of its nature and location.

Types of Injuries

Soft Tissue Injury	**Bone Injury**		**Joint injury**
	Close Fracture	**Open Fracture**	**Dislocation**
• Contusion • Abrasion • Incision • Laceration • Strain • Sprain	• Transverse Fracture • Oblique Fracture • Spiral Fracture • Comminute Fracture • Impact Fracture • Green Stick Fracture	• Compound Fracture	• Subluxation • Luxation

17.1.2 SOFT TISSUE INJURY

Contusion: Direct impact with blunt object which causes bleeding deep with muscles due to damage in capillaries. Wound look like bluish in color due to torn blood vessels



Abrasion: Loss of epidermis (Outer layer of the skin) superficial injury with loss of skin. Person feels burning sensation.

Note

Incision: Cut on arteries, tendon, veins, nerves due to sharp objects

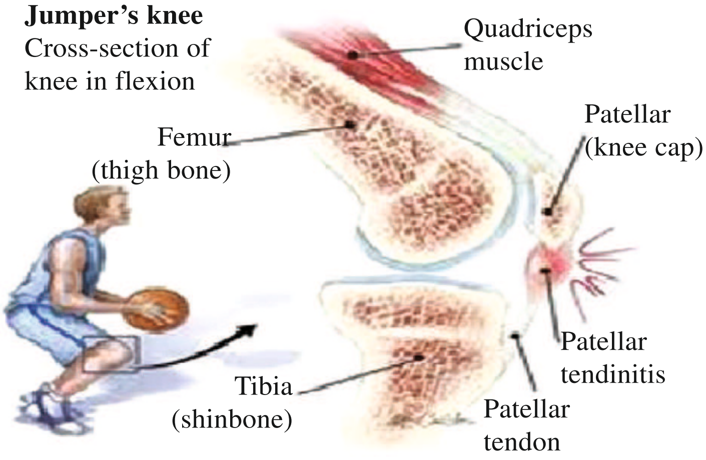
Laceration : Irregular tear in skin, cut in epidermis and dermis with blunt edge objects. An individual feel severe pain and redness beyond the wound edges.

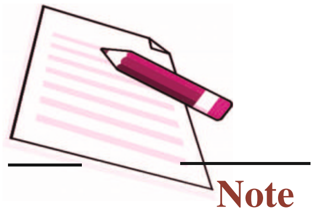
Strain : Overstretching and tearing of muscle units is known as strain. Symptoms inclues localized inflammation, severe pain etc.

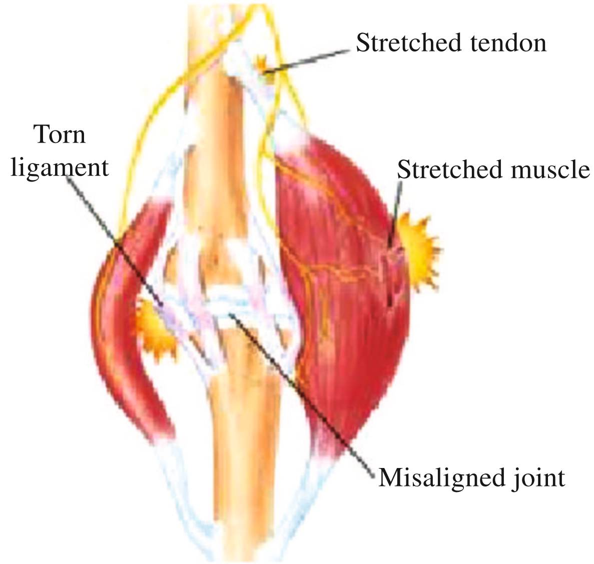
i. Grade I: Mild – slightly pulled

ii. Grade II: Moderate- Tear of fibre

iii. Grade III: Sever – Rupture of muscle





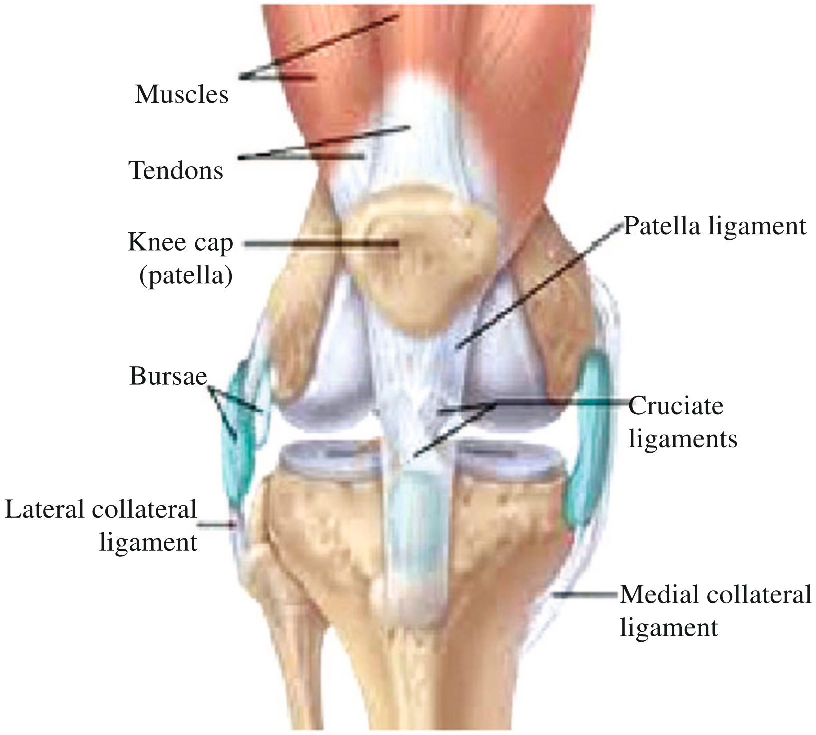


Sprain: Overstretching and tearing of ligaments is known as sprain. Symptoms inclues Pain, Tenderness, Loss of Function

i. Grade I: Stretching or minor tear of one or more ligaments

ii. Grade II: Partial tearing resulting in weakness or some loss of function

iii. Grade III: Extensive tearing or complete rupture of ligaments generally require surgery.



17.1.3 BONE INJURY

Fracture: It is a complete or incomplete break in a bone or discontinuation of bone resulting from the application of excessive force

a. **Close Fracture**: A **closed fracture** is when the bone breaks but there is no puncture or open wound in the skin

- **i.** **Transverse Fracture:** Broken at right angle to long axis of bone. *Transverse fractures of long bones* are usually the result of direct impacts, and thus are more common in older children after sports injuries.

Note

ii. **Oblique Fracture:** A fracture in which the line of break runs in oblique direction to long axis confined to one plane. It is a slanted fracture of the shaft along the bone's long axis.

iii. **Spiral Fracture:** Occur when one end of an extremity is fixed (e.g., a foot is planted on the floor) but the rest of the extremity remains in motion.

iv. **Comminute Fracture: A fracture in which the bone has broken or fragmented into several pieces**. It happens mostly due to crush.

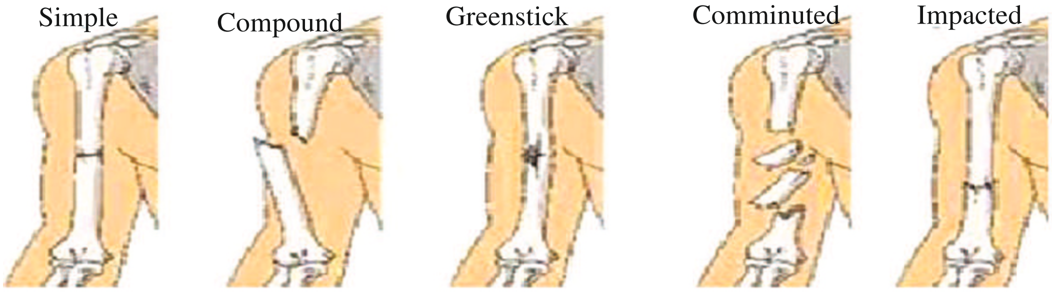
v. **Impact Fracture:** An impacted fracture is one whose ends are driven into each other. This is commonly seen in arm fractures in children and is sometimes known as a buckle fracture

vi. **Green Stick Fracture:** An incomplete fracture in which the bone is bent, it occurs most often in children in which the bone bends and partially breaks

b. **Open Fracture**: An **open fracture** is one in which the bone breaks through the skin.

i. **Compound Fracture:**is an injury that occurs when there is a break in the skin around a broken bone. In order for an injury to be classified as a compound fracture, the outside air (and dirt and bacteria) must be able to get to the fracture site without a barrier of skin or soft-tissue. Therefore, a bone does not need to be through the skin in order for the injury to be called a compound fracture.

Types of Fractures



Note

17.1.4 JOINT INJURY

a. ***Dislocation***: When bones shifted their place from normal position, do not meet properly at the joint is known as dislocation. It can be divided into two types :

i. Subluxation: There is partial dislocation in joints where slight displacement of bones takes place.

ii. Luxation: There is complete dislocation where bones completely separate from each other

17.2 TREATMENT FOR SIMPLE SPORT INJURIES

There are four steps to be taken care of common sports injuries.The process is known as R I C E which consists of foursteps. This process should be started as soon as an injury occurs.In RICE, Rstands for REST,I stands for ICE, C stands for COMPRESSION, and E stands for ELEVATION.

Rest

An individual should immediately stop the activity as soon as an injury occurs. Delay may further damage the injured part. Rest must be taken until injured part gets fully recovered.

Ice

Ice or cold water should be put on to the injured part as soon as possible to control swelling. It will help to decreases muscle spasm and also decreases of pain. Cold water or ice should be applied for 20-30 minutes after gap of 2-3 hours till 48 -72 hours.

Compression

Compression helps to limit and decrease swelling in the injured area. It should be applied with cold treatment. Compression can be done through elastic wrap of tape or belt but should not too tight to stop circulation, or too loose to allow further swelling.

Elevation

Last step of the process is to elevate the injured part. During the process support should be placed under the entire limb. The height should be enough that high above from the heart.

Note

The process of RICE should be continued for at least 48-72 hours. Any form of heat should not be applied under any circumstances, during this time otherwise it will leads to swelling and inflammation. In the process of optimal healing proper nutrition, good amount of sleep and a positive attitude is required.

DO YOU KNOW?

Cartilages: fibrous connective tissue placed over ends of the bones that allow smooth movement, absorb impacts. Any tear or break of cartilages is cartilages injuries.

Bursae: they are small sacs of fluid within joint to reduce friction. Bursitis occurs due to infection or overuse.

Ligaments: connective tissues that connect one bone to another bone is known as ligaments. Any tear or stretch of ligament known as sprain.

Tendons: connective tissues that connect muscle to bone known as tendons. Rupture or strained on tendons known as tendonitis.

ACTIVITY 17.1

Make a list of common injuries occurring in your favourite sport.

INTEXT QUESTION 17.1

1. Muscular tendon injury is known as

   ....

   ....

2. Injury to ligament is called as

   ....

   ....

3. Discontinuation of the bone due to impact, causing breakage of bone is called as?

   ....

   ....

4. Damage to cell causing death is called as

   ....

....

5. Outer layer of skin is known as

....

....

Note

17.3 FIRST AID

It is the immediate assistance given to the person suffering from sudden injury or illness. The objective of first aid is to provide immediate care to the injured or ill person to preserve life and protect casualty from further harm before he reach to competent and qualified medical person or medical institution. First aid must be given by the first aider only, otherwise results may be adverse.

First aid box

It is a handy box which contains following items by the first aider:

- Bandages
- Antiseptics
- Cotton balls and swabs
- Saline
- Hydrogen peroxide
- Iodine
- Dressings
- Eye wash
- Disposable gloves
- Scissors
- Adhesive Bandages
- Thermometer

ACTIVITY 17.2

Prepare a First Aid Box with essential items required and stick a list of items along with its expiry date on the top of the box.

Note

17.3.1 Principles of First Aid

Read aloud the following principles of first aid :-

Immediate action

First step is to form the action plan immediately, first aider must be quick, quiet and without panic.

Calling for medical assistance

First aider should inform nearest medical unit with fastest possible means of communication. Patient can be transferred to the ambulance and can come off the place of injury or illness.

Medical alert devices

Individual having prolonged disease sometime take alert devices in which their history of disease or injury including specialist medical contact is mentioned.

Reassurance and mental health

Psychological values of reassurance are equal as treatment. Some individual go into shock and make situation more worsen. First aider should reassure them in order to reduce tension.

Your response to an emergency

There are different types of emergencies in which individuals react differently. Sometime their response of disaster or injury may result in crying, fear, anxiety etc. it may last for weeks. By talking positive approach it can help to cope with injury.

Common causes of injuries

There are number of common risk factors that can lead to Athletic injuries.

1. Lack of Warming up and Cooling down.
2. Overtraining or Excessive loading on the body
3. Non safety precautions
4. An accident
5. Inappropriate equipment

6. Poor exercise techniques
7. Muscle weakness or imbalance
8. Joint laxity
9. Incomplete Calcification
10. Aging

Note

INTEXT QUESTION 17.2

1. Mark the following as True/False.

   a. First aid must be given by the trained first aider only

   b. PRICE is not important in sports injury recovery

   c. Warming-Up is not a reason for injury during sports participation

   d. It is essential to be hydrated to prevent injury

   f. Safety equipment are essential in sports to prevent injury.

17.4 PREVENTION OF SPORTS INJURY

Basic physical fitness

General fitness is important before indulging in any kind of activity. Bones and muscles must be strong enough to perform the activity effectively without having fatigue.

Equipment

The equipment must be carefully chosen to meet the demand of sport. The safety and technical equipment must be double checked in terms of quality before use. Comfortable and appropriate equipment is the prerequisite for any leisure and performance oriented activity.

Health

If somebody has suffered from infection or cold or other kind of disease, then he should not be involve in any physical activity. After suffering from disease, the body becomes weak the response from body goes slow, the chances of injury increase.

Note

Warming up and cooling down

Before any type of physical activity an individual must do warming up with a purpose to increase temperature, mobility of muscles and mental preparedness. After activity, cooling down must be done to lowering down the temperature of the body and further stretch the muscles to prevent injuries.

Systematic and scientific training

Systematic and scientific training is important to bring effective training results. Training schedule should be prepared by the competent person.Unscientific training leads to injuries.

Safety measures

All the protective gears must be carefully checked. Surface of playing area, equipment, first aid, rule and regulations should be strictly followed.

Psychological considerations

Before and after activity psychological training is required. Mental readiness, alertness, confidence, make up of mind, memory etc. are the factors to be addressed before training to reduce injuries.

INTEXT QUESTIONS 17.3

Match the following

	A		B
1.	P in PRICE stands for	i.	Thermotherapy
2.	Wax Bath	ii.	Prevention
3.	Ice Pack	iii.	Cryotherapy
4.	E in PRICE stands for	iv.	Safety Equipment
5.	Helmet	v.	Elevation

17.5 SAFETY PRECAUTIONS

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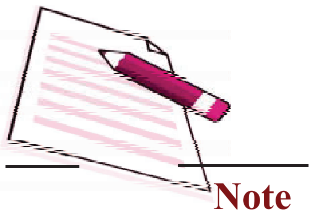

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source: http://indiankanoon.org/doc/232115

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1. Mark the following as True or False

   a. Qualified and certified coaches are essential for safety of players ( )

   b. Equipments should be tested regularly ( )

   c. Medical report of student before physical exercise or sports participation is essential ( )

   d. Over exertion of activity should be avoided during school sports activity ( )

   e. Abide by rules of sports is essential for injury prevention ( )

WHAT HAVE YOU LEARNT

- Injury occurs when force exceeds the limit of tissue due to which there is damage to cells and blood vessels.
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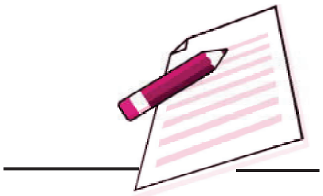

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TERMINAL QUESITONS

1. Describe sports injury and its classifications.
2. Explain the principles of FIRST AID.
3. Describe PRICE protocol.
4. How can we prevent sports injury among children?
5. Detail the points for Safety of children at school during sports.

ANSWERS TO INTEXT QUESTIONS

17.1

1. Strain
2. Sprain
3. Fracture
4. Cell Necrosis
5. Epidermis

17.2

a. True

b. False

c. False

d. True

e. True

17.3

1. Prevention - (ii)
2. Thermotherapy - (i)
3. Cryotherapy - (iii)
4. Elevation - (v)
5. Safety Equipment - (iv)

17.4

a. True

b. True

c. True

d. False

e. False

Note

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19

SHATKARMA

Read the conversation between Neha and her teacher-

Neha : Madam, we have learnt about yog in the previous lesson. May I also practise Yog?

Teacher : Sure, it is very necessary for all of us to practise yog to remain physically, mentally, emotionally and spiritually fit and healthy.

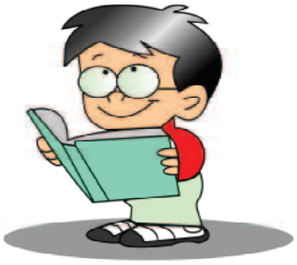
Neha : But I am very fat, I have sinusitis and acidity problem.

Teacher : Neha, you should start Shat Karma first to get rid of your physical problem. Then you should do other parts of Hath yog and yog.

Neha : Madam, what is Shat Karma. Please elaborate it properly.

Without proper cleansing, our mind and body will never be ready to receive maximum benefits from the yogic practices which are meant to propel the soul towards a higher sense of consciousness. Hence, *Shatkarma* practices are useful to purify subtle body through the cleansing of physical body. Let's now know about the Shat Karma i.e. meaning, types, precautions etc. in detail.

OBJECTIVES



After studying this lesson you will be able to:

- explain the meaning of Shat karma;
- describe various components of Shat Karma;
- learn the Shat-Karma practices for detoxification and
- explain precautions and benefits of Shat Karma.

19.1 MEANING OF SHATKARMA

'Shat' is a Sanskrit word representing a numeric term as 'Six' and **Karma** means- 'action/procedure'. It means combination of six types of actions, which are done primarily for purification process and cleansing practices of specific bodily organs in yog.

Note

According to the Hath Yog and Ayurveda all our diseases occur due to the imbalance of tri-dosha i.e Vata (air element), Pitta (fire element) and Kapha (earth element). Hath Yog says that you need not take medicines to get rid of your diseases as these may have many side-effects. In order to avoid these medicines one can do Shat Karma as it balances all the five elements i.e. air, fire, earth, water and space of our body and make us physically fit which enables you to practise higher level of yog like Asana, Pranayam, Dharna and Dhyan etc. Shat-Karma creates harmony between the two major pranic flows- **Ida Nadi** (via left nostril) and **Pingala Nadi** (via right nostril). This way it helps in attaining physical cleaning and also keeps a balance between these two *Nadis*, which in turn helps to open the entry point of Sushumna Nadi- a gate way of Kundlini Shakti-the ultimate aim of Hath yog. But, remember one thing that it should be practised under guidance of expert.

INTEXT QUESTIONS 19.1

1) Complete the sentence to make them meaningful.

   a) Shatkarma procedure is mainly for ....

   b) Cleansing practice of specific bodily organs is ....

   c) According to .... and Ayurveda all our diseases occur due to the imbalance of ....

   d) In order to avoid medicines one can do .... as it balances ....

   e) Shatkarma creates harmony between the two major pranic flows .... and ....

19.2 VARIOUS COMPONENTS OF SHAT KARMA

Shatkarma is a purification process of the body in the context of *Yog*. As we have studied above that there are six cleansing procedures in ShatKarma. They are:

धौतिर्बस्तिस्तथा नेतिस्त्राटकं नौलिकं तथा। कपालभातिश्चैतानि षट्कर्माणि प्रचक्षते।।

(हठ.2/22)

Shatkarma are as follows -

1) Dhauti
2) Basti

3) Neti

4) Trataka

5) Nauli

6) Kapalbhati

Above these six actions in Hath Yog are called purification practices.

1) DHAUTI

Dhauti karma is the first procedure described in ShatKarma. 'Dhauti' is a Sanskrit word which means- 'Washing or cleaning'. In Gherand a Samhita four types of Dhauti have been described, which are: AntarDhauti, DantaDhauti, HridDhauti, and Moolshodhan.

Table No.2.1: Table Showing Types of Dhauti

Antardhauti	Dantadhauti	Hriddhauti	Moolshodhan
Vaatsaar	Dantmool	Dand	-
Vaarisaar (Shankh prakshalana)	Jihvamool	Vaman(Kunjal)	-
Vahnisaar	Karnrandhra	Vastra	-
Vahishkrit	Kapalrandhra	-	-

In Hatha Yog Pardipika Vastra Dhauti and Gajkarni have been mentioned under the Dhauti Karma.

In terms of practice here we will discuss Vaman Dhauti (Kunjal) in detail.

VAMAN DHAUTI (KUNJAL)

Vaman Dhauti is commonly known as Kunjal. This cleanses the mouth, food pipe and stomach. It is the most commonly practised procedure. This practice should be done in the early morning with empty stomach. In this Kriya drink saline (salt) lukewarm water until the feeling of vomiting starts.

Pre and Post preparation and Discipline:

- This kriya should be done after defecation (clearing the bowels).
- The kunjal Kriya is carried out in the early morning with empty stomach.
- Clean the hands and cut the nails before Kunjal.
- Keep the jug and glass near to you.
- Mix saindha namak (rock salt) into lukewarm water as told (procedure given below).

Note

Note

- After Kunjal kriya one should eat Khichadi with ghee.
- Do not use chilly-spices on the day of completion of Kunjal Kriya.

Method:

1) Sit in *Kagasana*.
2) Drink lukewarm saline water one by one glass continuously until the feeling of vomiting starts. That means when one cannot drink water anymore.
3) Then stand up and bend forward from the waist.
4) Then open the mouth and start rubbing root of the tongue by three fingers of the right hand.
5) At the beginning of the practice the water can come in small quantity but after repeat touching the root of the tongue, vomit starts. After long time practice, vomit starts without putting fingers at the root of the tongue.
6) This kriya should be done once a week.

Benefits:

- Kunjal Kriya is useful for maintaining the health of a healthy person.
- It is useful to clear the acidity of the stomach.
- Asthma patients also get relief from its practice.
- It removes the foul smell of the breath and the phlegm of the throat.

Precautions:

- Persons suffering from hypertension, stomach ulcers and cardiovascular diseases should not practice it.

DO YOU KNOW?

- How to prepare water for cleansing practice and what should be the temperature of lukewarm water?

Take boiled water or heat sterile water to that extent so that the water becomes lukewarm. To check the temperature of the water pour some water on the back of the palm. It should be bearable to the skin.

- How much salt is to be added to make saline water?

Add the sufficient quantity of rock salt to the lukewarm water so that the taste of water becomes similar to the taste of tears.

Note

ACTIVITY 19.1

See how kunjal is performed and try to do it your-self under the guidance of trainer.

2) BASTI KRIYA

Basti Kriya means the 'Enema' (cleansing of intestines through anal route). In the ancient times Yogis stand in the river or the pond at the level of navel and used to pull the water into the intestines through the anus and then used to remove the water from the anus again.

Modern Enema

It is a refined form of this ancient Basti Kriya. No one will be ready today to perform the Basti Kriya in the river. Therefore, instead of performing the Basti Kriya in the river, the 'Enema' apparatus are being used. Lemon-water or salt water is allowed to enter inside the intestines through an enema apparatus. If there are any obstructed faeces present in the colon they get released and the colon becomes clean. Person suffering from constipation gets benefit immediately by giving enema. Periodically taking an enema keeps body healthy.

The best time to perform this practice is early in the morning with empty stomach.

3) NETI KRIYA

Neti means cleaning of the nose and its surrounding area. It also improves eye sight and helps in treating disorders of nose. It is of two types:

1) Jal Neti
2) Sutra Neti

Jal Neti

Fig.19.1: Jal Neti

Note

Method:

1) Sit in *Kagasan*.
2) Take lukewarm saline water in the Neti pot.
3) Put the cone of Neti pot into the left nostril and keep the right nostril slightly downwards by tilting the head towards right.
4) During procedure take breath from the mouth by keeping the mouth open.
5) The water starts coming out from the right nostril. Also, phlegm/mucus comes out along with the water.
6) Do the similar procedure with the other nostril.
7) Immediately after Jal Neti the Kapalbharti should be performed so that the water remaining inside the nostrils also come out and the nostrils get fully opened.
8) After this, relax in Shashankasan for some time.

Time- Jal Neti is performed only in the morning with empty stomach.

Benefit-It removes nasal tract problems for example- running nose, cough, sinusitis etc.

Sutra Neti:

Fig.19.2: Sutra Neti

Note

In *Sutra Neti*, a waxed cotton thread is traditionally used to clean the nasal cavity. This waxed cotton thread is inserted into the nose and then pulled out from the mouth. Then both ends are held with the hands and nasal cleaning is done by to and fro motion of the thread. Nowadays, a rubber catheter is used instead of the thread and it is easily available in any medical store.

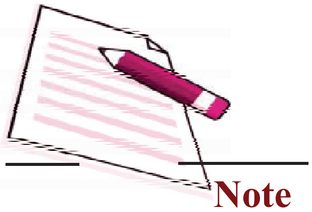
INTEXT QUESTIONS 19.2

A) Fill in the blanks with appropriate word:

1) Six cleansing procedures of shatkarma are ....
2) First procedure described in shatkarma is..
3) Kunjal is the common name for ....
4) Gherand Samhita described .... types of dhauti.
5) Meaning of Basti is ....
6) Cleaning of nose and its surrounding area is known as ....
7) Immediately after Jal Neti .... should be performed.

B. Mark the following sentence as 'True' or 'False':

1) Sadhak can sit in any asan for kunjal. ( )
2) Kunjal should be done once a week. ( )
3) Basti is the procedure where cleansing of intestine is done through anal route. ( )
4) During Jal Neti mouth should be closed. ( )
5) After Jal Neti relaxation is done in Shashankasan. ( )


Note

4) TRATAK KRIYA

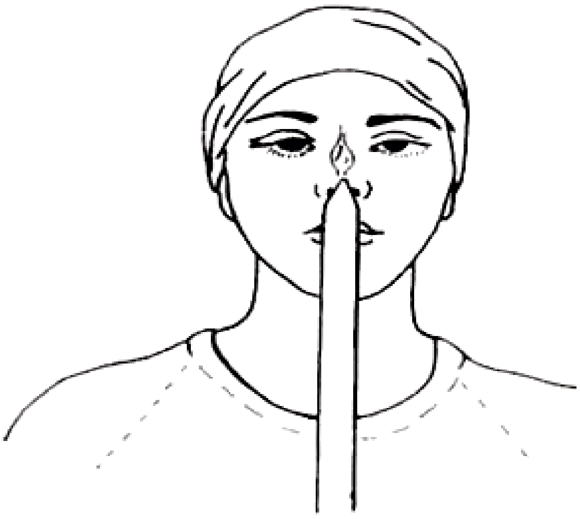


Fig.19.3: Tratak Kriya

Looking intently with blinkless gaze at a small point until tears are shed is known as Tratak Kriya.

Tratak is practised to activate unknown powers of the mind. Tratak is extremely powerful sadhna.

Method:

1) Light the *Ghee* lamp and keep it in front of the eye level at about 4 feet. Candle can also be taken in the absence of *Ghee*. The lamp should be placed in wind free area.

2) Sit in Padmasan or Sukhasan, keeping the back straight. Relax the whole body and be calm and quiet.

3) Now open your eyes and gaze at the flame of the lamp without blinking.

4) Gaze for as long as possible without strain.

5) When the eyes begin to tire, burn or shed tear then gently close your eyes.

6) Again open the eyes and start with the same procedure.

7) Slowly increase the practice. With practice, one can go from few seconds to few minutes without blinking. Do not extend it beyond 20 minutes.

Time: This kriya should be done regularly to get benefits.

This can also be done by drawing a black dot on the paper or on the symbol of "Aum", instead of ghee, candle can be used.

Benefit: It helps in developing concentration. It strengthens the eye muscles.

ACTIVITY 19.2

Practise Tratak regularly for 15 days and write your results/ experience.

5) NAULI KRIYA

It is the yogic exercise where the turning of the abdominal muscles take place.

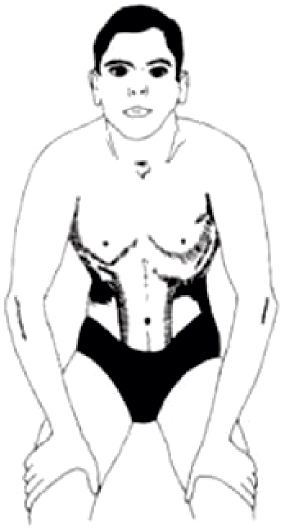


Fig.19.4: Nauli Kriya

Note

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Method

1) Stand upright with two feet gap between legs.
2) Place both hands on the knees and lean slightly forward.
3) Look on the stomach and exhale completely to get in Uddiyan bandha.
4) Abdominal muscles will align and emerge out at the center of the abdomen. It shapes like a naal (tube/stalk).
5) Try to rotate emerged abdominal muscles from right to left and then left to right.
6) Placing these emerged abdominal muscles at the center of the abdomen is termed as "*Madhya Nauli*", at the right side it is termed as "*Dakshin Nauli*" and at the left side it is termed as "*Vama Nauli*".

Note

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This kriya should be learned by all the Yogis.

Time- Its practice should be done in early morning, before meals and on empty stomach.

Benefits-

- It massages all the abdominal organs and keeps them healthy.
- It removes constipation and strengthens the digestive system.

Note: Patients suffering from hernia, ulcer, chronic renal and cardiovascular diseases should not practice it.

6) KAPALBHATI

The meaning of the 'Kapal' is 'the brain' and 'Bhati'- to shine, i.e, kriya that cleans and shines the brain is called Kapalbhati.

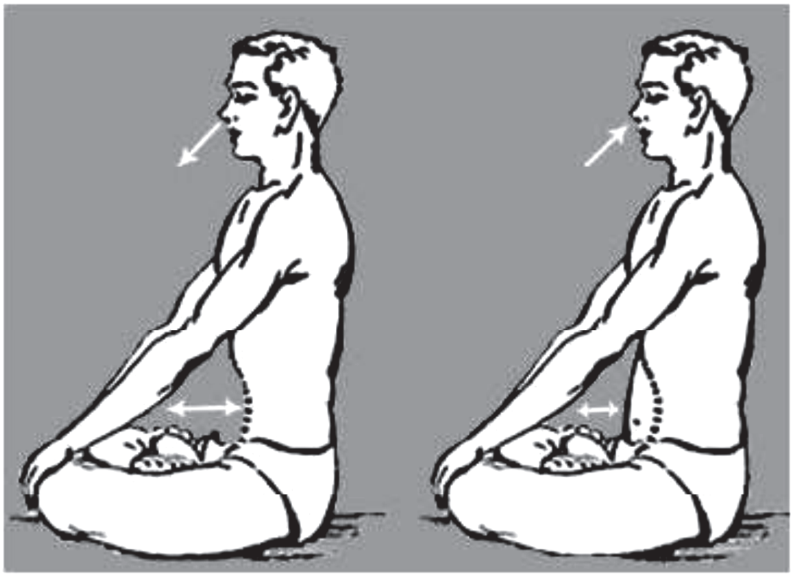


Fig.19.5: Kapal Bhati

Method

1) Sit in Padmasan or Sukhasana with straight spine.
2) Keep both hands on the knees.
3) Take a deep breath normally by relaxing the abdominal muscles.
4) Exhalation should be rapid and forceful while the inhalation is normal.
5) Holding of breath is not done in Kapal bhati. Only exhalation and inhalation is practiced.
6) Exhalataion is the main part of Kapalbhati.

Note

7) Repeat the same procedure about 20-25 times and gradually increase the time of practice.

Time: practice can be done on empty stomach.

Benefits:

- It purifies the lungs and blood by increasing the amount of oxygen in the body.
- It calms down the mind.
- Regular practice helps in reducing the weight and detoxifies all the systems of the bodies.

Precaution:

- This is not suitable for heart and high blood pressure patients.
- Do not practice it in the summer for a long time.

INTEXT QUESTIONS 19.3

A) Fill in the Blanks with appropriate word:

1) Looking intently with…….. gaze at a small point until tears are shed is known as…….
2) Asanas for practising Tratak and Kapalbhati are………or……….
3) Tratak helps in developing………..
4) During Nauli kriya exhale completely to get in………..
5) Kriya that cleans and shines the brain is called………
6) In Kapalbhati exhalation should be…..and…… while the inhalation is ……..
7) ………is the main part of Kapalbhati.

B) Mark the following sentence as 'True ' or 'False'

1) Tratak should be done regularly to get its benefit. (   )
2) Tratak strengthens eye muscles. (   )
3) Nauli kriya is done in sitting position. (   )
4) Patients suffering from hernia, ulcer, and chronic renal and cardiovascular diseases can do Nauli kriya. (   )

Note

5) While doing Tratak and Kapal Bhati no need to keep spine straight. ( )

6) Holding of breath is done in Kapal Bhati. ( )

WHAT YOU HAVE LEARNT

- 'Shatkarma' (also known as Shat kriya) is a compound word consisting of **'Shat' and Karma. 'Shat'** is a Sanskrit word representing a numeric term as 'Six' and **Karma** means-'action/procedure'.

- *Shatkarma* is a purification process of the body. There are six cleansing procedures in ShatKarma namely-1. Dhauti 2. Basti 3. Neti 4. Tratak 5. Nauli 6. Kapalbhati. These six actions in Hath Yog are called purification practices.

- Dhauti karma is the first procedure described in ShatKarma. There are many types of Dhauti but in terms of practice we have described Vaman Dhauti which is commonly known as Kunjal. This cleanses the mouth, food pipe and stomach. It is the most commonly practised procedure.

- Basti Kriya means the 'Enema' (cleansing of intestines through anal route). Now a days it is done by Basti apparatus with lemon or salt water.

- Neti means cleaning of the nasal passage and its surrounding area. It also increases eye sight and helps in treating disorders of nose. It is of two types- 1. Jal Neti- with lukewarm saline water. 2. Sutra Neti- with wax coated cotton thread.

- Tratak kriya- Looking intently with blinkless gaze at a small point until tears are shed is known as Tratak Kriya. It helps in developing concentration

- Nauli Kriya**-** the yogic exercise where the turning of the abdominal muscles take place. Placing these emerged abdominal muscles at the center of the abdomen is termed as "*Madhya Nauli*", at the right side it is termed as "*Dakshin Nauli*" and at the left side it is termed as "*Vama Nauli*".

- Kapal Bhati**-** kriya that cleans the brain is called Kapalbhati. Exhalation is rapid and forceful while the inhalation is normal. Holding of breath is not done in Kapal Bhati. Only exhalation and inhalation are practised.

Note

TERMINAL QUESTIONS

1) What is meant by ShatKarma? Explain the procedure.
2) Write the types of Dhauti as described in various Samhitas.
3) Write Pre and post preparations and discipline of Vaman Dhauti.
4) Write any two benefits of Kunjal Kriya.
5) Write the benefits of Neti Kriya.
6) Write benefits and precautions of Kapal Bhati.
7) Describe first three procedures of Shat Karma in detail while explaining Shat Karma.
8) Describe last three procedures of Shat Karma in detail while explaining Shat Karma.

ANSWERS TO INTEXT QUESTIONS

19.1

1) a) Purification

   b) Shat karma

   c) Hath Yog, Tridosha

   d) Shat karma, all five elements

   e) Ida and Pingala Nadi

19.2 (A)

1) Dhauti, Basti, Neti, Tratak, Nauli and Kapal Bhati
2) Dhauti
3) Vaman Dhauti
4) Four
5) Enema
6) Neti
7) KapalBhati

Note

B) **Mark True or False**

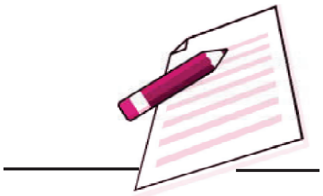
1) False
2) True
3) True
4) False
5) True

19.3A

1) Blinkless, Tratak
2) Padmasan, Sukhasan
3) Concentration
4) Uddiyan Bandh
5) Kapal Bhati
6) Rapid, Forceful, Normal
7) Exhalation

B

1) True
2) True
3) False
4) False
5) False
6) False



Note

20

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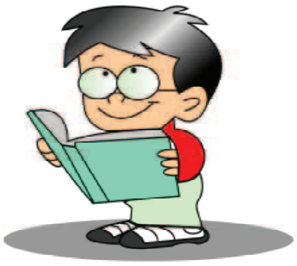
ASANA

In the previous lessons, you have studied the spiritual component of physical education and Hatha Yog. We have discussed the effect and benefits of Hatha Yog also. It is clear that yog plays an important role in physical fitness, mental harmony, emotional balance, spiritual and moral values or overall personality development. 'Asana' is the third important ladder of Ashtanga Yog in the Patanjali Yogsutra. It is essential that we should perform the Yogic Sukshma Vyayama before practicing of Asana. Because Yogic Sukshma Vyayama prepares our body for practicing of Asana. It provides physical stability and firmness which makes the body strong and healthy. In this unit we will study about Yogasana and their different types, importance and need.

OBJECTIVES



After studying this lesson you will be able to:

- explain the asana and its importance;
- describe the preparatory practices i.e. Sukshma Vayayam;
- explain the practice of Surya-namaskar and
- classify the asana.

20.1 ASANA

First of all we should know about the meaning of Asana. Asana means to sit. Asana is a stable and comfortable posture. The word Asana is generally used for a mat also. But in Yog, Asana is meant for posture which has a more important place in Yog Practices.

Maharshi Patanjali was a great seer who introduced and compiled Yog in a systematic way to the world. He has defined Asana in an easy way in his treatise 'Yogsutra':

'Sthirasukhamasanam" स्थिरसुखमासनम् (2/46 P.Y.S)

Note

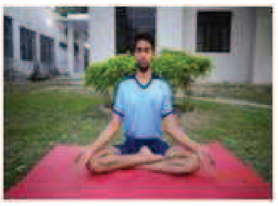


Fig. 20.1

The meaning of this is 'to remain steady with ease is Asana or posture. Here we should know that the meaning of Asana is a meditative pose like Sukhasana, Padmasana, Siddhasana etc. But in Hatha Yog Practices other form of postures are also considered as Asana.

Fig. 20.2

Fig. 20.3

The purpose of an asana in Patanjali yog is to balance the different nerve impulses, feeling of pain and pleasure. Asana is an important part of hath yog. It is a specific body position which opens the energy channels and psychic centers.

In Hatha Yog, it is strongly believed that the practice of Asana gives control on our body and mind is, therefore, automatically controlled.

Here you should definitely understand that when one practices asana, steadiness develops and prana moves freely. When prana moves freely, the body also becomes supple and the toxins are removed from the system. The yogic scriptures say that altogether there are 84,00,000 of asanas, as many asanas as forms of life. We can also find a progressive evolution from the simplest form of life to the complex. But among 84,00,000 asanas, 84 are considered important and only 32 Asana are discussed in detail. These can be seen in *Gherand Sahinta*.

Importance of Asana

Asanas are very important for us in our life. They provide :

- physical stability
- firmness

- flexibility
- body tone
- sound health
- Peace of Mind
- Beyond duality

Note

INTEXT QUESTIONS 20.1

1. Define asana according to Patanjali.

   ....

   ....

   ....

2. Explain the ultimate aim of asana according to hath yog.

   ....

   ....

   ....

20.2 PREPARATORY PRACTICES i.e. SUKSHMA VAYAYAM

As it has already been told that Sukshma Vayayam is essential before practicing Asana. First we should perform the Yogic Sukshma Vyayama and then we should practice Asana. Here we should know the meaning of Sukshma Vayayam.

The word Sukshma means subtle and Vayayam means exercise. So those exercises which are mild, easy and have deep rooted effects are considered as Sukshma Vayayam.

The concept of this practice is to provide all possible movements to every part of body joints in a comfortable, smooth and balanced way. It improves flexibility and prepares our body for intermediate group of asanas or classic asanas. Ideally all practices of this series are performed in a sitting position but we can modify it according to our requirement.

Sukshma Vayayam can be classified broadly in four categories:

i. Practice of Leg Joints

Note

ii. Practice of Hand Joints

iii. Practice of Neck Joints

iv. Practice of Eye

20.2.1 Preparations and Precautions before Yogic Practices

Now we will learn to practice these subtle actions in detail. But it is necessary to understand some instructions and precautions before doing the yogic practices and asanas. Carefully read and understand the instructions given below.

- The place of practice should be clean, open and airy.
- Practice always on carpet and bed sheet at flat ground.
- Use the comfortable and loose clothes according to the season.
- Practice should be done in easy and comfortable way according to capacity. Do not put undue stress & pressure.
- Glasses, watches and ornaments should be removed;
- keep your body relaxed while performing the action;
- When performing SV or asana, breathing should be taken only by the nose until mentioned otherwise;
- Before practising, Keep your stomach, intestine and bladder empty.
- Relax when you feel tired.

Now we will learn the practice. Read carefully the position and method of the Kriyas described below, understand and memorize and practise them at the right time.

Prayer

Yogic prayer is considered necessary before starting any kind of yog practices.

Position

- Stand erect, keep both feet together, body straight.
- Close your eyes.
- Join both hands together in front of chest, slightly above the heart area.

Method: Pray to God while meditating. For example the prayer should be done as follows –

Om.........

Asato ma sadgamya;

Tamso ma jyotirgamya;

Note

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Mrityorma amritamgamya

Note - Instead, you can also make another prayer of your God according to your wishes.

20.2.2 Practice of Leg Joints

Base Position

- Sit with the legs outstretched in front and palms on the floor beside the hip, fingers pointing backward or Dandasana.
- Head, neck and back should be in a straight line, and take support of the arms.
- Eyes closed and relax the whole body.
- Repeat the practice 10 times.

Practice 1: Toe bending

- Sit on the Base position;
- Move the toes of both feet slowly backward and forward but ankles should be relaxed and motionless.
- Hold each position for a few seconds.

Practice 2 – Ankle Bending

- Sit on the Base position;
- Slowly move both feet backward and forward, bend them from ankle joints;
- Hold the position for a few seconds.

Practice 3 – Ankle rotation

- Sit on the Base position;
- Rotate both the feet clockwise and anticlockwise from ankle.

Practice 4 – Butterfly

- Sit on the Base position;
- Bend the knees and bring the soles of the feet together;
- Keeping the heels as close to the body as possible ;
- Clasp the feet with both hands.
- Gently bounce the knees up and down;

  Benefits –The practices are helpful in releasing hip joints, pelvic girdle and lumbar spine stress.

Note

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20.2.3 Practice of Hand Joints

Practice – 1 Hand clenching

- Sit on the position of Dandasana;
- Stretch both arms in front of the body at shoulder level and palm facing downward;
- Open the hands, and stretch the fingers wide apart as possible ;
- Close the fingers and make a tight fist with thumb inside .

Practice – 2 Wrist bending

- Sit on the position of Dandasana;
- Stretch the arms in front of the body at shoulder level ;
- Keep the arms open and downward and fingers straight through out the entire practice ;
- Bend the palms from the wrist joint upward and backward.

Practice – 3 Wrist joint rotation

- Sit on the position of Dandasana;
- Make a fist with the both hands with the thumb inside;
- Slowly rotate the wrist joints clockwise and anticlockwise.

Practice – 4 Shoulder socket rotation

- Sit on the position of Dandasana;
- Place the fingers of the right hand on the right shoulder and left hand on the left shoulder;
- Fully rotate both elbows at the same time in a large circle clockwise and anticlockwise.
- Benefits –The practices are helpful in releasing shoulder stress.

20.2.4 Practice of Neck Movements

- Sit on the Base position;

  Stage 1 : Move the head forward and Backward as much as possible comfortably .

  Stage 2 : Move the head to the right and left side as much as possible comfortably .

  Benefits –The practices are helpful in releasing neck and shoulder muscles stress.

20.2.5 Practice of Eyes

Blinking-

- Sit on the Base position;
- Keep your eyes open ,
- blink the eyes 25 to 30 times quickly ;
- Close the eyes and relax it for 20 seconds.

Sideways viewing –

- Sit on the Base position;
- look at a fixed point in front;
- focus eyes on the extreme left for a few seconds;
- now focus eyes on the extreme rifgt for a few seconds;

INTEXT QUESTIONS 20.2

Fill in the Blanks with appropriate word.

i. The word Sukshma means ....and Vayayam means exercise.

ii. Sukshma Vayayam can be classified broadly in .... categories.

20.3 PRACTICE OF SURYA-NAMASKAR

We have learnt and practiced Sukshma Vayayam. Now we will discuss Surya-Namskar. It is a wonderful practice for us to keep our body fit.

Surya Namaskara means salutation to the sun. It can be seen as a form of worship of the sun. In yogic terms this indicates that Surya Namaskara awakens the solar aspects of an individual's nature and releases this vital energy for the development of higher awareness. This can be realized by the practice of surya Namaskara . Surya namaskara is a series of twelve physical postures ,which has to be repeated by the other side then it makes one round . It is an effective way of loosing up ,stretching ,massaging and toning all the joints , muscles and internal organs of the body .

Fig. 20.4

It is a set of 12 fixed yog asana, which is done in a certain order.

20.3.1 The method of Surya Namaskar

Preparation

- First stand erect with the feet together and the arms hanging loosely by the side of the body.
- Close the eyes gently and be aware of whole physical body.
- Take the awareness to the eyebrow centre and visualize the red rising sun infusing the whole body and mind with its vitalizing and healing rays.

First Position: Pranamasana (prayer pose)

- Slowly bend the elbows and place the palms together in front of the chest in Pranam-mudra.
- Relax the whole body and breath normally.
- Pray to God for sound health and wisdom.

Second **Position : Hasta-Uttanasana**

- Raise and stretch both arms above the head.
- Keep the arms separate shoulder width apart.
- Bend the head, arms, and upper trunk backward as much as is comfortable.
- Inhale while raising the arms and exhale while bending back.

Third Position: Padaahastasana

- Now, bend forward slowly and try to keep your palms on the floor besides the feet and forehead to the knees.
- But do not strain and keep the knees straight.
- Exhale while bending forward

  Contra-indications –People with back problems, sciatica, slip-disk etc. should not do this pose. In these conditions forward bending is prohibited.

Fourth Position: Ashwa Sanchalanasana (Equestrian Pose)

- Now stretch the right leg back as far as possible and simultaneously bend the left knee as much as possible comfortably.
- Give a curve to the back and try to gaze upward . Make sure that right knee should be on the floor.
- Inhale while stretching the right leg back.

Note

Fifth Position: Parvatasana (Mountain pose)

- Now take the left foot also back beside the right foot.
- Simultaneously, raise the buttocks up as much as possible and keep the head between the arms, so that the back and legs form two sides of a triangle.
- Try to keep the heals on the floor in the final pose and bring the head towards the knees, but do not strain.
- Exhale while taking the left leg back and keep breath normal in final position.

Sixth Position: Asthanga Namaskara (Salute with eight parts of the body)

- Now, Bend both knees and keep them on the floor.
- With this bend your elbows and keep your chest and chin on the floor.
- The part of the body between chest and knee - buttocks, hip and abdomen should not touch the floor.
- Take normal breathing.

Seventh Position: Bhujangasana (Cobra Pose)

- Now lower the buttocks and hips to the floor.
- Raise your upper body up and straighten your hands.
- Inhale while raising the torso and arching the back .

Eighth Position: Parvatasana

- This position is a repeat of position 5.
- Exhale while raising the hip.

Ninth Position: Ashwa Sanchalana

- Keep the palms flat on the floor and bring the right foot forward in between the hands.
- Place the left knee on the floor.
- Inhale while assuming the pose .

Tenth Position: Padahastasana

- This is a repeat of position 3.
- Bring the left foot forward next to the right foot.
- Exhale and straighten the knees.

Note

Eleventh Position: Hasta uttanasana

- This is a repeat of position 2.

Twelfth Position Pranamasana (prayer pose)

- This is a repeat position of 1.
- Exhale while assuming the final pose.

  Note: Position 1-12 constitute half a round of Surya Namaskara. To complete the other half the same movements are performed with other leg in position 4th and 9th.

20.3.2 Benefits of Surya-namaskar:

Now we should know the benefits of Surya-namaskar.

- Surya-nmaskar is a complete set of exercises which provides complete health and body fitness.
- It strengthens and tones all parts of the body.
- It makes the spine and the waist flexible and removes the disorders.
- It keeps abdomen, intestine, stomach, pancreas, heart and lungs healthy.
- It helps to increase the blood circulation all over the body smoothly and removes the impurities of blood and destroys the skin diseases.
- It helps to balance secretion of hormones of all glands of the body.
- Surya-nmaskar enhances the vigour, vitality and mental peace.

INTEXT QUESTIONS 20.3

1. What is meant by Surya-namaskar?

   ....

   ....

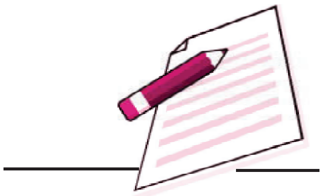
2. How many positions are there in Surya-namaskar?

   ....

   ....

3. What is the seventh position of Surya-namaskar? Explain.

   ....



Note

20.4 CLASSIFICATION OF ASANAS

The Asanas may be classified in following categories mainly:

1. Meditative Asanas
2. Forward bending Asanas
3. Backward bending Asanas
4. Side Bending Asanas
5. Inverted Asanas
6. Twisting Asanas
7. Balancing Asanas
8. Relaxing Asans

- **Meditative Asans:**

  The aim of all Asanas are to make one capable of sitting in a meditative asans for longer period of time steadily with ease. There are three-four types of meditative Asanas like Sukhasana, Padmasana, Siddhasana, Swastik Asans etc.

- **Forward bending Asanas:**

  There are many forward bending Asanas like Janushirasana, Pashchimottanasana, Padahastasana, Yog mudra, Mandook Asana, Padprasara Pashchimottanasana etc.

- **Backward bending Asanas:**

  There are many Backward bending Asanas like Ushtrasana, Sarpasana, Bhujangasana, Matsyasana, Chakrasana, Rajkapotasana, Dhanurasana etc.

- **Side bending Asanas**

  There are many Side bending Asanas like Side bending, Tiryak Tadasana, Trikonasana etc.

- **Inverted Asanas**

  There are many Inverted Asanas like Vipreetakarni Asana, Sarvangasana, Shirshasana, Vrishchikasana, Hand Stand Asana etc.

- **Twisting Asanas**

  There are many Twisting Asanas like Meruvakrasana, Ardhamatsyendrasan, Vakrasana, Katichakrasana, Markatasana etc.

Note

- Balancing Asanas

  There are many Balancing Asanas like Tadasana, Vrikshasana, Ek padasana Garunaasana, Bakasana, Mayurasana, Kukkutasan etc.

- Relaxing Asanas

  There are many Relaxing Asanas like Shavasana, Balasana, Makarasana, etc.

  We will study and practice all the above categories of Asana during the Practical Session.

INTEXT QUESTIONS 20.4

Match the following in a meaningfull way:

	A		B
i.	Titli Asana	a.	Inverted asana
ii.	Astang Namaskar	b.	Balancing
iii.	Dhanurasana	c.	Backward Bending asana
iv.	Natrajasana	d.	Surya Nmaskar
v.	Sarvangasana	e.	Sukshma vayama

WHAT HAVE YOU LEARNT

- Yog plays an important role in physical fitness, mental harmony, emotional balance, spiritual and moral values or overall personality development.
- 'Asana' is the third important ladder of Ashtanga Yog in the Patanjali Yogsutra.
- It is essential that we should perform the Yogic Sukshma Vyayama before practising of Asana. Because Yogic SukshmaVyayama prepares our body for practising of Asana.
- Maharshi Patanjali has defined Asana in an easy way in his treatise 'Yogsutra' ***'Sthirasukhamasanam"*** **स्थिरसुखमासनम्** (2/46 P.Y.S).
- The word Sukshma means subtle and Vayayam means exercise. So those exercises which are mild, easy and have deep rooted effects are considered as Sukshma Vayayam.

- Sukshma Vayayam can be classified broadly in four categories:

  i. Practice of Leg Joints

  ii. Practice of Hand Joints

  iii. Practice of Neck Joints

  iv. Practice of Eye

- Surya Namaskara means salutation to the sun. It can be seen as a form of worship of the sun. In yogic terms this indicates that Surya Namaskara awakens the solar aspects of an individual's nature and releases this vital energy for the development of higher awareness.

TERMINAL QUESTIONS

1. Describe the Practice of Surya-namaskara with names of all positions and its benefits.
2. Write the techniques of hands joints S V and give its benefits.
3. What is meant by Asana? Classify them.
4. Write short notes on:

   i) Eye practices ,

   ii) Leg Joints Practices

ANSWERS TO INTEXT QUESTIONS

20.1

1) ***'Sthirasukhamasanam"*** स्थिरसुखमासनम्

2) In Hatha Yog, it is strongly believed that the practice of Asana gives control on our body and mind is therefore automatically controlled.

20.2

i) subtle

ii) four

20.3

i) Surya Namaskara means salutation to the sun.

Note

ii) 12

iii) Bhujangasana

20.4

i) e

ii) d

iii) c

iv) b

v) a

Suggested Reading and References

- Maharishi Patanjali Yog Sutra,
- Hatha Yog Pradeepika - Swami Swatmaram,
- Yog And Kriya - Swami Satyanand Saraswati Y P T
- Asana Pranayan Mudra Bandha - Swami Satyanand Sraswati Yog Publication Trust, Munger, Bihar, India
- Shrimadabhagvadagita
- Yogic Therapy By Swami Kuvalayananda Central Health Education Bureau Directorate General of health services, Kotla road, New Delhi

Note

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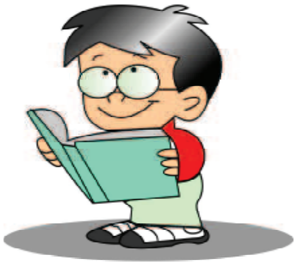
21

PRANAYAM

So far, we have studied yam, niyam and asan described by Maharishi Patanjali in Yog Sutra. According to Ashtang yog, Pranayam is the fourth component. Here you must have to understand that after getting expertise in asanas one should start practice of Pranayam and this is described in all yogic scriptures. Ordinarily, every human being breathes from birth to death, unceasingly. But the question arises, how the breathing process of a common man is different from the one who is practising Pranayam? So first, we should be aware about the normal breathing pattern properly. Pranayam is the only connecting link between body and mind. Patanjali, in his text of yog Sutra, mentioned Pranayam as means of attaining higher states of awareness. The word ‘Pranayam’ implies control on pranas i.e., to attain control on breathing. In this lesson, we will learn about different types of breathing, how to control breathing, the types of Pranayam and how it affects our body, mind and soul.

OBJECTIVES

After studying this lesson, you will be able to:



- explain the meaning of Pranayam and its importance;
- elaborate Pre- Pranayam practices;
- describe the components and types of Pranayam and
- explain the method of meditation through Pranayam.

21.1 PRANAYAM AND ITS IMPORTANCE

The word Pranayam has two Sanskrit roots - ‘Prana’ and ‘ayam’. “**Prana**” means vital energy and life force. “**Ayam**” means stretching, extension or expansion or control. Thus, we can say that the word Pranayam means extension or expansion of Prana or ‘breath control’ to extend and overcome one’s normal limitation of Prana. Therefore, it should not merely be considered as a breathing technique to provide extra oxygen into the lungs. It influences the flow of Prana in the Nadis of the Pranamay kosha. Controlling Prana through Pranayam steadies the mind and cleanses the body, thus it boosts the overall health and well-being of the

Note

practitioner. Thus, the technique of Pranayam provides a method by which the life force can be activated and regulated in order to go beyond one's normal limitations and attain a higher state of experiences.

Importance

Pranayam is one of the important vital components of yog that directly or indirectly affects the proper functioning of different systems of the body. Once you understand the right breathing technique, this can create a huge impact on your thoughts and actions. Pranayam practice provides people the freedom from any harmful and negative mental conditions such as depression, anger, arrogance, excessive greed for money and more. In addition, regular Pranayam helps extend life and enhance perception. By practising Pranayam, you can control mind's fluctuations and prepare yourself for deep meditation.

21.1.1 Scriptural Reference about Pranayam

Pranayam is an important part of yog practices and is mentioned in almost all texts in yog. Maharishi Patanjali defines it as -

- ***"Tasminsate swaspraswasiryorgativichchhedah pranayam"***

  Pa. yo.su.2.49

Which means, after getting expertise in asana there has to be regulation or restraint of speed of swas (inhalation) – praswas (exhalation) is called as Pranayam.

- ***"Chale vate chale chittam, nischalam nischale bhavet***
  Yogisthanutyamapnoti tato vayum nirodhayet"

  Ha. Yo.pra.2.2

"When *Prana* fluctuates then the *Chitta* (mind) also fluctuates; when the *Prana* becomes steady then the *Chitta* also becomes steady". So we should try to control *Prana*.

It means Pranayam practices are intended to bring about calmness in the mind by harmonizing the Pranic flow in the body.

We see warning in one *Shloka* in Hath Yog Pradipika (Ch 2.16). i.e., "Pranayam can remove all diseases if it is done correctly; if it is done incorrectly then it can actually cause illness"

This is the indication about Pranayam. It is a very advance practice, so one should slowly and systematically develop one's ability to perform Pranayam techniques over a period of time under the guidance of an expert.

Note

INTEXT QUESTIONS 21.1

1) Name the root words of Pranayam with their meaning.
2) Mark the following statements as 'True' or 'False'
   a) Pranayam is considered as only a breathing technique to provide extra oxygen to the lungs. ( )
   b) Pranayam is an important part of yog and is mentioned in almost all texts of yog. ( )
   c) Pranayam can be practised even after not getting expertise in asanas.)(

21.2 PRE-PRANAYAM PRACTICES

Let us know about Pre –Pranayam Practices:

The process of Pranayam is concerned with the breathing which is an indicator of life. So, if it is done in a wrong manner, it may harm us as we have just studied. Therefore, it needs some preparations. As we know that Pranayam is advanced yogic technique. A sound and healthy body is a must for the practice of Pranayam.

In the last topic, we have discussed about Prana, Pranayam and its impact on our life. Now we will learn about pre-Pranayam practices i.e. about the preparation technique of Pranayam practices. They are-

21.2.1 Asana

There are so many practices which are advisable for Pranayam and for the preparation of Pranayam. To successfully practise and attain the full benefits of breath control and pranayam, it is necessary that it be built on the solid foundation of a steady and comfortable sitting posture. The **spine should be straight** and perpendicular to the floor so that respiratory muscles can do deep breathing which is an essential requirement. Bad and poorly performed posture will lead to shallow breathing and low stamina. So, Asan is given utmost importance. So one should develop expertise in any one of the following Asanas-

- Siddhasan,
- Sukhasan
- Padmasan

Note

Precautions:

- Always breathe through nostrils unless specifically instructed.
- Practise in quite clean and pleasant room which is well ventilated and free from dust.
- Wear light and loose comfortable clothes.
- Must empty bowel and bladder before practising.
- Food to be taken only 30 minutes after practising of Pranayam.
- Pranayam should be practised after practising asan and before meditation.

21.2.2 Breathing Practice

Breathing lies at the centre of human existence. Therefore, it forms core of any yogic practice. Breathing facilitates oxygen supply to the brain as well as to the rest of the body. Learning to properly control your breath will actually help you to attain a strong body and a sharp mind. Learning to properly breathe will help you get the most out of your practice and give an increased sense of vitality and energy and help in maintaining mental focus throughout the day. So, first let's learn about breathing:

There are four types of breathing. They are -

Natural/ Normal breathing

Natural breathing is basically breath awareness. It is the starting point of working with the breath. It allows us to understand how we are breathing and our breathing patterns. It is relaxing, soothing and can be practised at any time. It is the basic starting point of meditation.

Abdominal Breathing

This type of breathing is associated with the movement of diaphragm and the outer wall of the abdomen. This form of breathing draws in the greatest amount of air at the least muscular effort. In this, during inhalation abdomen rises due to downward movement of diaphragm and on exhalation it falls down due to upward movement of diaphragm.

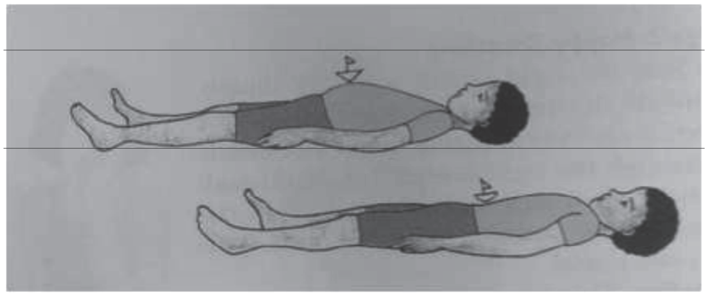


Fig.21.1: Abdominal Breathing

Thoracic Breathing

In this form of breathing, chest and rib's movements take place. It expends more energy than abdominal breathing for the same quantity of air exchange. It is often associated with physical exercise and exertion, as well as stress and tension.

Yogic Breathing

It combines all the above modes of breathing – abdominal and chest breathing into one harmonious movement. It is the ideal breathing that we are interested in developing. Only yogic breathing can give the maximum inhalation and exhalation. It may be practised at any time and is especially useful in stressful situations. Its purpose is to have a control over the breath, correct poor breathing habits and increase oxygen intakes. This is the best practice for gentle massage of abdominal and chest organs. This is a very useful practice to improve lung capacity.

Note: It can be practiced at any time. i.e., on empty stomach or after meals etc.

INTEXT QUESTIONS 21.2

1) Name the Asanas required for Pranayam over which one should have expertise.

2) Name the four breathing types of pre-Pranayam breathing practices.

3) Fill in the blanks with appropriate asans:

   i) Spine should be .... for preparation of Pranayam.

   ii) In thoracic breathing .... and .... movements take place.

   iii) Yogic breathing combines all modes of breathing i.e .... and .... breathing in one harmonious movement.

4) Mark the following statements as 'True' or 'False'

   i) Breathing can be done through mouth or nostril as per ease. ( )

   ii) Abdominal breathing is associated with the movement of diaphragm and outer wall of the abdomen. ( )

   iii) Yogic breathing can be practised at any time. ( )

Note

21.3 COMPONENTS OF PRANAYAM

There are three components of Pranayam – Poorak, Rechak and Kumbhak. They are as follows-

1) **Poorak** or inhalation – It means complete inhaling (*swas*)
2) **Rechaka** or exhalation- It means complete exhaling (*praswas*)
3) **Kumbhak** – it means retention of breath. It is further divided into 2 parts.
    i) Antar Kumbhak – Retention of breath after poorak
    ii) Bahir Kumbhak – Retention of breath after rechak.

- The most important component of Pranayam practice is Kumbhak or retention of breath.
- Kumbhak should be practised under the supervision of expert.
- Those who are suffering from high blood pressure, heart problems should not practise Kumbhak in their Pranayam practice.

21.3.1 Different Types of Pranayam

In various yogic scriptures, we find different types of Pranayama (here Kumbhak) but the common types seen in all of them are Suryabhedi, Ujjayi, Bhramri, Bhastrika, Sheetali and Sheetkari. Nadi shodhan/ anulom- vilom is performed before doing all these Pranayam.

For easy understanding, here they are categorized under following headings. They are -

1) Balancing Pranayam — Nadi Shodhan Pranayam
2) Tranquilizing Pranayam — Bhramri, Ujjayi
3) Cooling Pranayam —— Sheetli, Sheetkari
4) Heating Pranayam – Bhastrika, Suryabhedi

Now, we will study these in brief. The method of doing all these, we will learn in practical manual.

21.3.2 Nadi Shodhan (Alternate Nostril Breathing)

Nadi shodhan literally means “channel clearing”. Though it is not a Pranayam yet it is considered as one of the basic types of Pranayam. The study of Pranayam must start with such basic procedure, so that it becomes easier to study and practise the different types of Pranayam. The Vayu cannot enter the Nadis if they are full of impurities. With this in mind, we study this Nadi Shodhan Pranayam first. It is a purifying Pranayam that alternates the blockage of each

nostril to channel air in a concentrated flow. It must be done before doing any pranayam.

Following steps instruct how to perform nadi shaodhan:

- Sit down in any above mentioned Asan keeping spine erect.
- Now, use your right hand thumb to close the right side of your nose. Inhale slowly and deeply using the left nostril.
- Next, close the left nostril with fingers and exhale using the right one.
- In the same way, now with the left nostril still closed, inhale using the right nostril and exhale with the left one. This is one cycle.

You can continue doing this practice for around 10-15 cycles.

Fig.21.2: Nadi Shodhan or Alternate Nostril Breathing

Benefits:

- Though simple in practice, yet it is very helpful in making the respiratory system improve functionally. It strengthens all the respiratory organs which are quite helpful in further advancement of the practice of Pranayam.
- It is a basic practice with no limitation except retention of breath. Alternate nostril breathing is a safe practice.
- It ensures that the whole body is nourished by an extra supply of oxygen. The brain centers are functioning at their optimum level.
- It clears pranic blockages and balances the nadis including Ida and Pingla Nadis, which leads Sushumna Nadi to flow properly resulting in spiritual awakening. Hence, it is known as balancing Pranayam.
- It balances both the hemispheres of the brain. On the physical level, it balances nervous system. It develops inner awareness and sense of deep understanding.
- **Awareness** – On the alternate nostril breathing and eyebrow centre.

Note

Note

21.3.3 Bhramari Pranayam – Humming Bee Breathing

In this type of Pranayam we exhale making a humming sound, the sound of 'm', as in the third letter of 'aum'. It resembles the typical humming sound of bees. That's why, it is called Bhramari Pranayam. Exhale slowly and do not strain. The sound should be smooth, even and controlled. It should be done under the guidance of expert.

Fig.21.3: Bhramari Pranayam

Contra-indications: Severe ear infection, ear ache, recent abdominal surgery.

If there is any feeling of faintness, dizziness, excessive perspiration or vomiting sensation, it should be stopped immediately.

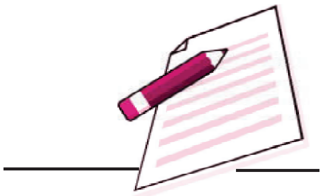
Benefits –

- It is a tranquilizing Pranayama. So it is best suited for insomnia (sleeplessness) disorder.
- It relieves tension, anger and anxiety.
- It develops concentration and memory.
- It controls high blood pressure.
- It strengthens the throat and voice, useful for any throat problems.
- It is good for thyroid problems.

21.3.4 Sheetkari Pranayam

In Pranayam, we inhale through our mouth with the sound of 'sheetkar' which is produced on inhaling. Bring the teeth together lightly. Separate the lips so that teeth are exposed and then fold the tongue behind teeth to touch soft palate. Inhale slowly through the teeth. Close the mouth and exhale slowly through the nose. Keep the breaths slow and relaxed.

Contra-indications: People suffering from low blood pressure, respiratory disorder, excessive mucus, sensitive teeth, chronic constipation, hypothyroidism and hypoacidity should not practise this Pranayam. It should not be practised by the person having artificial teeth.



Note

Benefits-

- This practice cools the body and mind.
- It induces muscular relaxations and mental tranquility.
- It helps to reduce blood pressure and acidity.
- It controls hunger or thirst, gives feeling of satisfaction.
- Helpful for nausea.
- It removes excessive heat, therefore, it is beneficial in summer.

Fig.21.4: Sheetkari Pranayam

21.3.5 Sheetli Pranayama

As the name 'sheetal' suggests cool, calm and soothing; this Pranayam also helps us in achieving the same in practice. For this open the mouth and extend the tongue outside of the mouth, rolling it from the sides to form a tube. Inhale through the tube and exhale through the nose slowly and deeply.

Note

Fig.21.5: Sheetli Pranayam

Contra-indications: -Same as Sheetkari Pranayam.

Benefits:

- It cools and reduces mental and emotional excitation. Other benefits are similar to Sheetkari Pranayam.

Both sheetli and sheetkari Pranayam are very useful in developing resistance against heat.

21.3.6 Ujjayi Pranayam (The Psychic/Victorious Breath)

Ujjayi means the ocean and this Pranayam is about mimicking the oceanic sound or the sound of the waves. In Ujjayi breathing, both inhalation and exhalation are through the nose. It is a diaphragmatic breath which fills the lower belly first, then the lower rib cage, the upper chest and throat. The opening between the vocal cords is contracted/ narrowed, creating a rushing or hissing sound. This audible breathing has been linked to ocean waves or snoring of a baby.

Contra-indications – People who are introvert by nature or suffering from fluid retention or low blood pressure should not practise this Pranayam.

Note

Benefits:

- It soothes the nervous system and calms the mind.
- It is beneficial in insomnia and hyperthyroid problems.
- It relieves mental tensions, stress, and anxiety.
- It has tranquilizing effect.

Practice note: The contraction of throat/ vocal cord should not be too strong. It should be gentle throughout the practice.

21.3.7 Bhastrika Pranayam (Bellow's breath/ Heating Pranayam)

'Bhastrika' is a sanskrit word which means 'bellows'. This Pranayam resembles the blowing of bellows, hence it is called Bhastrika Pranayam. It is an excellent breathing exercise which we can practise slowly or fast as per our convenience. Basically it is fast breathing. Take a deep breath through both nostrils and fill the lungs with air and then exhale with a hissing sound. Inhale deeply and exhale completely.

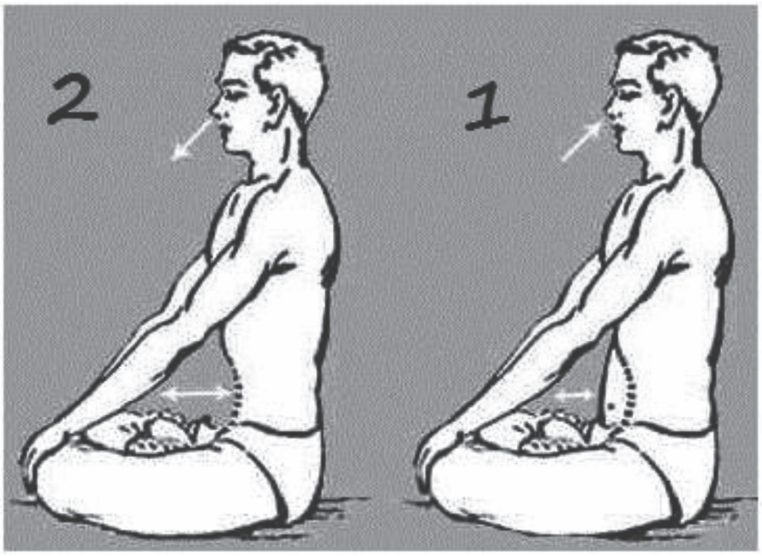


Fig.21.6: Bhastrika Pranayam

Contra-indications

High blood pressure, any heart problem, hernia, vertigo, hyper-acidity, ulcer, any recent abdominal surgery, or if there is too much heat in the body, stroke and hyperthyroidism.

Practice note: One should stop practice immediately if he/she feels - fainting, dizziness, excessive perspiration, excessive shaking of the body, vomiting etc.

Note

Benefits –

- Bhastrika purifies lungs, so it is very useful in asthma, tuberculosis and bronchitis.
- It corrects bad breathing habits.
- It speeds up the blood circulation.
- It optimizes digestive system by vigorous massage of the digestive organs.
- Increases the flow of prana throughout the whole pranic body.

21.3.8 Suryabhedi Pranayam (Right Nostril Breathing)

'Surya' means the sun and bheda means to pierce/awaken. In the body Pingala Nadi represents the energy of the sun or vital energy. Therefore, it means that we pierce or purify Pingala Nadi. In this Pranayam, we inhale and exhale through the right nostril.

Contra-indications - High blood pressure, heart disease, epilepsy, ulcer, acidity, hyperthyroidism, anxiety, headache or menstruation.

Benefits-

- Increases vital energy in the body.
- Heats the body.
- Stimulates the sympathetic nervous system and the left part of the brain.
- Eliminates Vata related trouble and
- Helps to balance Kapha.

INTEXT QUESTIONS 21.3

1) Fill in the blanks with appropriate words:

   a) Three components of Pranayam are………, ………. and ……….

   b) The most important component of Pranayam practice is………

   c) Tranquilizing Pranayam are………. and ………

   d) …………. is a purifying Pranayam.

   e) Nadi shodhan strengthens all the ……… which are quite helpful in further advancement of Pranayam practice.

   f) On……humming sound is produced in……….Pranayam.

   g) On ……..sound of sheetkar is produced in ……….Pranayam.

   h) ……….. Pranayam resembles the blowing of bellows.

2) Mark the following statements as 'True' or 'False'

a) Sheetali Pranayam helps in cooling the body and mind. ( )

b) In Ujjayi breathing, both inhalation and exhalation are through the nose. ( )

c) People who are introvert by nature can do Ujjayi Pranayam. ( )

d) In Surya bhedi Pranayam we inhale through the left nostril and exhale through the right nostril. ( )

e) Just after abdominal surgery or hernia one should not practise Bhastrika Pranayam. ( )

Note

21.4 HOW PRANAYAM PRACTICE LEADS TO MEDITATION AND SAMADHI?

In yogic meditation, breath training is essential preparation for deep meditation and Samadhi on the path to self-realization. When we try to meditate it is extremely common to have tension in the muscles and noisy thoughts in the mind. The nervous system is the mediator between the tense body and the noisy mind. One of the best ways to regulate that nervous system, and in turn the body and mind, is through the breath. Breath is the bridge between the body and the mind. Regulate breath, and the body and mind will follow. Patanjali in his text of yog Sutras mentioned the holding of breath as important practice in reaching up to Samadhi. So this is achieved through Pranayam practice. As we have studied pranayam is the way to control or regulate breath. With pranayam one can control or regulate pranic flow and achieve a healthy state of body and mind, and can attain higher states of awareness and self-realization.

WHAT YOU HAVE LEARNT

- The word Pranayam has two Sanskrit roots - 'Prana' and 'ayam'. "**Prana**" means vital energy and life force. "**Ayam**" means stretching, extension or expansion or control. Therefore, control of breath is Pranayam.
- Controlling Prana through Pranayam steadies the mind and cleanses the body
- **Pre- Pranayam Practices** are the processes of Pranayam concerned with the breathing. So, if it is done in a wrong manner, it may harm us. Therefore, some preparations are needed. They are- Asan and Breathing Practices.

Note

- **Asan -** To successfully practise and attain the full benefits of Pranayam, it is necessary that it should be built on the solid foundation of a steady and comfortable Asan. Thus one should attain expertise in any one of these Asanas- Siddhasan, Sukhasan Padmasan.
- **Breathing Practice-** Breathing lies at the centre of human existence. Therefore, it forms core of any Yogic practice. There are four types of breathing- Natural, Abdominal, Thoracic and Yogic breathing.
- **Components of Pranayam-** There are three components of Pranayam – Poorak, Rechak and Kumbhak.
- There are different types of Pranayam told in yogic scripture and the common in all of them are Suryabhedi, Ujjayi, Bhramri, Bhastrika, Sheetali and Sheetkari, Nadi shodhan/ anulom- vilom.
- Nadi shodhan literally means "channel clearing". It is a basic and purifying Pranayam that alternates the blockage of each nostril to channel air in concentrated flow.
- Bhramari Pranayam- we exhale making a humming sound similar to humming sound of bees.
- Sheetkari Pranayam- In this we inhale through our mouth with the sound of 'sheetkar' which is produced on inhaling.
- Sheetali Pranayam- As the name 'sheetal' suggests cool, calm and soothing, this Pranayam also helps us to achieve the same in practice.
- Ujjayi Pranayam- This Pranayam is about mimicking the oceanic sound or the sound of the waves. Both inhalation and exhalation are through the nose.
- Bhastrika Pranayam- This Pranayam resembles the blowing of bellows, hence it is called Bhastrika Pranayam. Basically it is fast breathing,
- Suryabhedi Pranayam- To pierce or purify Pingala Nadi is suryabhedi Pranayam. In this Pranayam, we inhale and exhale through the right nostril.
- In yogic meditation, breath training is essential preparation for deep meditation and Samadhi on the path to self-realization. Breath is the bridge between the body and the mind. Regulate breath, the body and mind will follow accordingly. This is how Pranayam leads to meditation.

TERMINAL QUESTIONS

1) Describe the role and importance of pre-Pranayam practices.

2) How breath, prana and mind are influenced by each other. Explain.

Note

ANSWERS TO INTEXT QUESTIONS

21.1

1) Pranayam has two root words - 'Prana' and 'ayama'. Prana means vital energy and life force. Ayama means stretching, restraining, extension or expansion.

2) a) Wrong
   b) True
   c) False

21.2

1) Sukhasan, Sidhasan, Padmasan

2) Natural breathing, Abdominal breathing, Thoracic breathing and Yogic breathing

3) i) Straight
   ii) Chest and ribs
   iii) Abdominal and thoracic

4) i) False
   ii) True
   iii) True

21.3

1) a) Poorak, Rechak and Kumbhak
   b) Kumbhak
   c) Bhramari and Ujjayi
   d) Nadi shodhan
   e) Respiratory organs
   f) Exhaling, bhramari
   g) Inhaling, sheetkari
   h) Bhastrika

2) a) True
   b) True

Note

c) False

d) False

e) True

Suggested Reading and References

- Asana Pranayan Mudra Bandha By Swami Styanand Sraswati Yog publication Trust, Munger, Bihar, India
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- Experience Of yog World yog Convention Y P T
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Note

22

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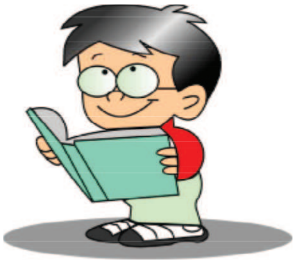
MUDRA AND BANDHA

In the previous lesson we have learnt about Pranayam and its benefits in detail. Now in this lesson we will learn about Mudra and bandha. Practice of Mudra and Bandha is considered to be more effective than practice of asan and Pranayam. So the persons, who cannot perform or are unable to perform asan and pranayam, can avail the benefits by practising Mudra and Bandha to maintain their health. In yog these are used to regulate pran energy i.e. vital force which you have studied in previous lesson.

OBJECTIVES



After studying this lesson you will be able to:

- explain the meaning of Mudra and its importance;
- explain the methods of various types of Mudra and
- elaborate the meaning of Bandha and its importance.

22.1 MEANING OF MUDRA

Mudra is a symbolic gesture used in yog. The Sanskrit meaning of the word ***Mudra*** is- ‘gesture’, ‘mark’ or ‘seal’. In yog and meditation Mudras are most commonly known as hand positions, which are believed to affect the flow of energy in the body and chakras by clearing the psychic centers and energy channels.

There are various types of mudras and each type has a specific effect on the body and mind. Although hand mudras are most common in yog, there are also face, postural, lock and other mudras. The main texts concerning the use of mudras are the Hatha Yog Pradipika and Gheranda Samhita. The Hatha Yog Pradipika describes 10 Mudras whereas the Gheranda Samhita describes 25 Mudras.

Note

22.1.1 Importance of Yog Mudra

Yog in general is considered to be a combination of postures (for stretching) and breathing techniques (for calming and relaxation). Postures (Asan) affect all the body systems while breathing practices (Pranayam) bring awareness of the relationship between the body and mind.

1) It helps in flow of prana in the body if it combines with yogic breathing exercises
2) It creates a connection with brain.
3) It makes change in the sensory organs, glands, veins and tendons.
4) The use of mudras adjusts the flow of energy affecting the balance of air, fire, water earth and ether for healing.
5) Mudra is a practice of physical, mental and spiritual well-being.

INTEXT QUESTIONS 22.1

A) Fill in the blanks the appropriae words:

1) .... is a symbolic gesture used in yog.
2) .... Mudras are most common in yog.
3) Mudras described in the Hatha Yog Pradipika are .... whereas in the Gheranda Samhita .... Mudras.

22.2 TYPES OF MUDRA

Hast Mudra

The well being of our health can be controlled by the fingers of our hand because the fingers are essentially electrical circuits. It can adjust the flow of energy. Touching the fingers of hand in different positions is known as Hast Mudra.

Fig.22.1: Fingers Representing Elements

The Hast mudra can be used to balance five vital elements of the body through five fingers of the hand. Each finger represents each element. These are as follows:

1) Thumb – Agni/ fire element

Note

2) Index finger – Vayu/air element
3) Middle finger – Akash/ space element
4) Ring finger– prithvi/ earth element
5) Little finger – jal/ water element

Now we will study different types of Mudras-

Gyan Mudra

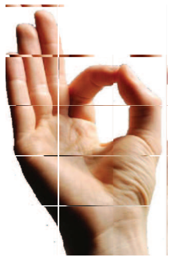


Fig.22.2: Gyan Mudra

It is the most popular mudra among hand mudras. It is used in all types of practices like meditation, worship, healing, dancing etc. The meaning of the Sanskrit word "Gyan" is Supreme Knowledge. Popularly known as the "mudra of knowledge," The practice of this mudra enhances brain.

Method

1) Sit for meditation, relax your body and sit straight.
2) Put your hands both in front of your knees and join the tips of your thumb and index finger.
3) Touch the tip from skin to skin and not to the nail. Keep the other fingers straight and relaxed.

Benefits

1) This Mudra stimulates the air element of our body and thus empowers mind.
2) It helps in increasing concentration and is the best remedy for dullness, in-activeness, and lack of enthusiasm, recklessness, lack of creativity and loss of memory problems.
3) People suffering from Alzheimer's disease and other nervous system disorders will be benefited.
4) It helps in decrease of diseases such as Hypothyroidism, Hypoparathyroidism, Hypoadrenalism, and Hypopituitarism.

Duration

Daily thirty minutes of practice is enough to get best results of Gyan mudra. You can do it at any place or anytime. To get quick results it is preferred in early morning with meditation posture.

Precautions:

1) Pregnant women should not practise it for long duration without the guidance of a yog teacher.

Note

2) If a person is suffering from severe migraine or headaches it is best to practise with open eyes.

Vayu Mudra

This mudra is also called as Vayu shaamak mudra because it is useful to decrease air element within the body.

Fig.22.3: Vayu Mudra

Method

1) Press the tip of both index fingers into the root of thumbs.
2) Now fold your thumb inwards so that it presses the index finger lightly.
3) The other fingers should be held straight.
4) This can be done in any sitting pose, which are used while doing meditation.

Benefits

1) It helps to balance the air inside the body.
2) It solves the problems such as flatulence and joint pain.
3) If one feels uneasy after a meal, it should be practised in the Vajra Asana (Diamond Pose).
4) It is helpful in reducing Parkinson's disease.
5) It helps in decreasing anxiety and restlessness.
6) It is effective in hormonal imbalances.

Duration

Daily practice of 30-45 minutes is enough to get best results. To get quick results it is preferred in early morning with meditation posture.

Precautions

1) After getting relief in pain one should release the mudra. It is not beneficial to continue for longer duration after getting relief in pain.

Surya Mudra

It is one of the most famous Mudra in hand mudras. The practice of this mudra is useful in reducing earth element within the body.

Fig.22.4: Surya Mudra

Method

1. This can be performed in any pose used for doing meditation.
2. Place the tip of the ring finger on the base of the thumb.
3. Bring the gentle pressure of the thumb upon this finger.

Benefits

1. It reduces coldness of body.
2. Beneficial in inactivity of thyroid glands.
3. Beneficial in overweight and obesity.
4. Beneficial in loss of appetite.
5. Beneficial in digestion problems like constipation, indigestion etc.
6. Helpful in no sweating or less sweating of body.
7. Cure Vision or eye problems.

Duration

Regular practice of 30 minutes is enough to get maximum benefits. To get best results it is preferred in early morning and meditation posture.

Precautions

1. Don't do it in high blood pressure.

Ling Mudra

Linga mudra is the best mudra to improve fire element in the body.

Fig.22.5: Ling Mudra

Method

1. Sit in any meditative pose.
2. Now interlock both palms by keeping the left thumb erect, pointing upwards.

Benefits

1. It burns the extra fat in the body that helps in weight loss.
2. This mudra increases hotness in the body that helps to relieve cold and related ailments such as sinusitis, wet cough and sticky stools.
3. Beneficial in asthma and other respiratory disorders.

Duration

Regular practice of 30 minutes is enough to get desirable results. This mudra should be practised only when there is a need.

Note

Precautions

1. Don’t do in fever or having pitta Prakriti.
2. Don’t do it for long duration as it will affect organs.

Prithvi Mudra

Fig.22.6: Prithvi Mudra

Sanskrit term, Prithvi means “the vast one” and is also the name of Earth.

This mudra is useful to increase earth element and decrease fire element in body.

Method

1. Sit in any meditative pose.
2. Touch the tips of the ring finger and the thumb with slight pressure.

Benefits

1. It increases strength and endurance of the body.
2. In a lean and thin person, this mudra is highly beneficial for overall health.
3. It gives relief from ulcers and burning sensations.
4. Beneficial in jaundice and fever.

Duration

Regular practice of 30-45 minutes is enough to get good results. You can do it anytime or in any place but the morning hour or when you are in meditation is the best choice to get best results.

Precautions

1. Kapha dosha prakriti person should do it for small duration.

Pran Mudra

Fig.22.7: Pran Mudra

The word “Pran” means life. The practice of Pran Mudra strengthens all the five pranas in our body.

Method

1. Sit in any meditative pose.
2. Touch the tips of little finger, ring finger and thumb with slight pressure.

Note

Benefits

1. It is useful to increase the pranic energy and immunity.
2. It is also useful in intolerance of heat stress, inflammatory disorders, sleeplessness, high blood pressure, burning in the mouth, throat and stomach.

Duration

Regular practice of 30-45 minutes is enough to get good result. It can be practised at any time or any position but in the morning hours is the best time and a break can be taken in between the 45 minutes practice.

Precautions

1. In cough and cold condition it should be done only for short duration.

Varun Mudra

Varun mudra is to increase water element in the body so it is also called as a jal-vardhak mudra.

Fig.22.8: Varun Mudra

Method

1. Sit in any meditative pose.
2. Touch the tips of the little finger & thumb with slight pressure.

Benefits

1. Dryness of the body.
2. Skin and blood disorders
3. Dehydration

Duration

Regular practice of 30 minutes is enough to get good result. It can be practised at any time or any position but morning hours are the best time and a break can be taken in between the 30 minutes practice.

Precaution

In obesity and swelling in the body, it should not be practised.

Note

INTEXT QUESTIONS 22.2

A. Match the Following:

1. Thumb	a. water
2. Index finger	b. fire
3. Middle finger	c. space
4. Ring finger	d. earth
5. Little finger	e. air

B. Fill in the blanks with the appropriate word:

1. ……… is the most popular Mudra among hand mudras.
2. …….helps to balance the air inside the body.
3. In Gyan Mudra the tip of …… and ……..finger are joined.
4. Joining the tip of the ring finger on the base of the thumb is practiced in……..Mudra.
5. …….. and …… Mudras are used for weight loss and obesity.
6. ……..Mudra is beneficial for a lean and thin person.
7. Varun Mudra is beneficial in ……… and ……….
8. To get maximum benefits of any Mudra minimum of ……. Minutes practice is necessary.

22.2.1 Asan Mudra/Postural Mudra

Mudras which are performed as postures are called Asan mudra.

Maha Mudra

Fig.22.9: Maha Mudra

Note

Method

1. Sit on the floor with legs stretched in front. Fold the left leg and press the perineum with the left heel.
2. The right leg remains stretched in front throughout the practice.
3. Bend forward and hold the big toe of the right leg with the hands. Exhale while bending forward.
4. Raise the head upwards and let both eyes' sight to be on the centre of eyebrows. Inhale slowly and deeply.
5. Hold the breath inside and perform Moola Bandha.
6. Contract the throat so that air does not escape from the lungs.
7. Maintain this position with breath inside (Antar Kumbhaka) as long as you are comfortable.
8. This is one round. One can practice from 3 rounds to 12 rounds.
9. To release the pose, exhale slowly and bring the head to normal position. Stretch out the legs, relax the body and breathe normally.
10. The same method should be followed with other leg.
11. The attention remains at the centre of eye-brows during the practice.

Benefits

1. Maha Mudra improves digestion, colic and cures the disorders of the stomach.
2. It helps to cure skin disorders.
3. It can neutralize the effect of toxins in the body.
4. It generates peace and helps in increase in concentration.
5. This practice makes the spine straight and enables the pranic energy to go between Mooladhara and the Vishuddhi chakra.

Precautions

1. Avoid during pregnancy, high blood pressure, disorders of the eye & heart disease.
2. Avoid in recent surgery.

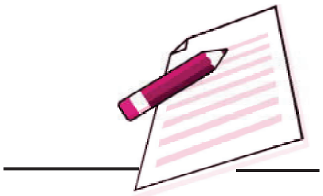
Note

Vipareeta Karani Mudra

Fig.22.10: Vipareet Karani Mudra

Method

1. Start with the supine position, lying on your back in a relaxed manner. Let the hands rest on the floor next to the body and breathe normally.
2. Try to raise the legs slowly to 90 degrees to the floor.
3. Now place the hands under the lower back at the waist level. Use the hands and elbows for support to raise your body up further.
4. Breath should be inside when you are raising the body to the vertical position.
5. Use the support of the hands to raise the body further up, till the whole trunk is about 45 degrees to the ground and the leg are vertical. At this stage the body weight rests on the shoulders. Hands and elbows remain to support and balance the body.
6. In the final pose the legs are 90 degrees to the floor and the trunk is about 45 degrees to the floor.
7. Breathe normally while maintaining the steady raised position.
8. While releasing the position, the breath is held inside and the body is slowly brought down to the supine position.
9. After performing Vipareeta Karani Mudra; counter asanas like Matyasana, Ushtrasana or Supta Vajrasana is performed.



Note

Benefits

1. It stimulates the thyroid gland.
2. It helps to balance the functions of other endocrine glands.
3. This pose helps in piles, hydrocele and hernia.
4. It enhances the function of digestive system

Precautions

1. Avoid in menstruation, pregnancy, high blood pressure, heart diseases, eye disorders & constipation.
2. If you feel tingling sensation in feet or legs, immediately come back into the sitting position.

Ashwini Mudra

Practising of frequent contractions & relaxations of anal muscles is called Ashwini Mudra.

Method:

1. Sit in padmasana, siddhasana, vajrasana or sukhasana for ashwini mudra.
2. Once you get into the posture, relax for a minute, breathing freely and deeply. Then inhale fully, hold your breath, and contract the anal muscles with a 1-2 seconds interval.
3. Press your chin against the bottom of the neck, touch the palate with the tip of your tongue and start releasing your breath (exhaling), then release the mudra, and after that slowly raise your head.

Benefits

1. It stimulates the abdomen and pelvic area including reproductive and digestive organs.
2. This simple practice can help you get rid of constipation, deals with the diseases of the rectum and haemorrhoids and can improve sexual health.

Precaution

1. Don't do during pregnancy.
2. Don't do it after the surgeries related to anus.

Note

INTEXT QUESTIONS 22.3

A. Fill in the blanks with appropriate word:

1. Mudras which are performed as postures are called……
2. In ……. Mudra, the attention remains at the …… of eye-brows during the practice.
3. In final stage of vipareet karani mudra, the legs are at ….degrees and the trunk is about …. degrees to the floor.

B. Mark the following statements as True or False.

1. After performing vipareet karani mudra, counter asanas like matyasana, ushtrasana or supta vajrasana are performed. ( )
2. Practicing of frequent contractions & relaxations of anal muscles is called Ashwini Mudra. ( )
3. Vipareet Karani Mudra improves sexual health. ( )

22.2.2 Mukh Mudra

Mudras which are performed with face are called Mukh mudra. Shambhavi, kaki comes under Mukh Mudra.

Shambhavi Mudra (The Eyebrow Center)

Gazing at the eyebrow centre, sitting in any meditative pose with gyan mudra is known as Shambhavi mudra. Shambhavi mudra is considered one of the most important mudras for meditation.

Fig.10.11: Shambhavi Mudra

Note

Method

1. Sit in any meditative asana like Padmasana, Siddhasana, Sukhasana or Swastikasana.
2. Keep palms on the knees with Gyan or Chin mudra.
3. Roll both the eyes upwards and try to see at the eyebrow center. It forms a kind of V-shaped line at the center.
4. Concentrate the eyes on center region of the V-shaped line.
5. Maintain this position as long as you can. The eye muscles will start to pain after few seconds or within few minutes. Relax the eyes and bring it back to the normal position. Rest for some time and try again. With regular practice, one can hold this position for longer duration.
6. Breathe normally during the practice. As you proceed, your breath will slow down and become more stable.

Benefits

1. It helps in reaching the higher states of consciousness.
2. It stabilizes the mind and increases concentration.
3. It helps to strengthen the eye muscles.
4. It activates the Ajna chakra

Precaution

1. Do not practice if there is glaucoma or in any eye problems.

Kaki Mudra

In this mudra the face appears like a crow, hence it is known as Kaki mudra.

Fig.22.12: Kaki Mudra

Note

Method

1. Sit in any comfortable meditative pose with erect spine.
2. Close the eyes & relax your body.
3. Keep both hands on knees with gyan mudra.
4. Then open your eyes and focus on tip of the nose.
5. Make a beak of lips by rolling the tongue and inhale slowly with this beak.
6. When lungs are full hold the breath as long as possible (Antar Kumbhak) and close the eyes.
7. Then exhale slowly through the nose.
8. Practice this for at least two to three minutes. Slowly increase the duration.

Benefits

1. Strengthen the face
2. Strengthens the nasal passage
3. Strengthens the respiratory system
4. Refreshes the skin
5. Cleans the Chakras

Precaution

- Do not practise in polluted environment
- Do not practise in glaucoma, low blood pressure, cough or cold.
- In recent eye operation one should consult an expert before practising.

INTEXT QUESTIONS 22.4

A. Fill in the Blanks with appropriate words:

1. Shambhavi and Kaki Mudra comes under …… Mudra.
2. Gazing at the eyebrow centre, sitting in any meditative pose with gyan mudra is known as……
3. In …….. Mudra the face appears like a crow.

Note

22.3 MEANING OF BANDHA

The bandhas are an important part of asana practice. The Sanskrit word Bandha means to hold, tighten or lock. The bandhas aim to lock the Pranas in particular areas and redirect their flow into *Sushumna Nadi* for the purpose of spiritual awakening. Bandhas are the 'body locks' that are held by tightening and lifting of certain muscles of the body.

There are three main bandhas: **Jaladhara bandha** (throat), **Uddiyana bandha** (abdomen) and **Moola bandha** (located in the perineum).

Maha bandha is the combination of all three bandhas together.

Importance

1. These four techniques allow the practitioner to control different nerves and organs of the body.
2. They also affect the chakras and release spiritual power by allowing Kundalini flow up to Sushumna Nadi.

Jalandhara Bandha – The Chin Lock

Jalandhara bandha is one of the energetic locks used in a Hatha Yog practice. It is also known as 'chin lock'. The Sanskrit meaning of Jala is 'web' or 'net' and dhara means 'holding'. It is performed by extending the neck and elevating the sternum before dropping the head so that the chin may rest on the chest.

Fig.22.13: Jalandhar Bandha

Note

Method

1. Sit erect in meditative pose like Padmasana or Siddhasana.
2. Place the palms on the knees and make sure that the knees are touching the floor.
3. Close your eyes and relax the body. Breathe normally.
4. Now inhale slowly and deeply and then hold the breath.
5. Bend the head forward so that the chin touches the chest between the two collar bones notch/pit of the sternum.
6. Straighten the arms and press the knees down with the palms to create a kind of locked position. The shoulders are slightly forward to make sure the arms stay locked.
7. Hold this position as long as you are comfortable. Remember that the breath is held inside. Beginners should hold the breath for just a few seconds. Later it can be increased to a minute or more depending on your capacity.
8. To release the lock bend the arms, raise your head and exhale out. Come back to the straight position and take a few normal breaths.
9. Repeat the process as many times as you feel comfortable.

Benefits

1. It stimulates the thyroid and the para thyroid glands. Thus regulates the body metabolism.
2. Jalandhara Bandha helps to activate the throat (Vishudhi) chakra.
3. It prevents the Prana Shakti from moving upwards.
4. It increases the blood flow in the brain.
5. Jalandhara Bandha is one of the three yogic locks that have to be mastered before attempting the Maha Bandha or the triple lock.

Precautions

1. Avoid in high or low blood pressure, heart diseases.
2. Avoid in stiffness of neck, cervical spondylitis & spondylosis.
3. Never force your chin to touch the notch/pit of sternum.

Note

Uddiyana Bandha- The Flying Up Lock

The word Uddiyana in Sanskrit means - to fly up, or to rise up. This 'flying up lock' means- flying upwards of one's internal energy i.e. Prana.

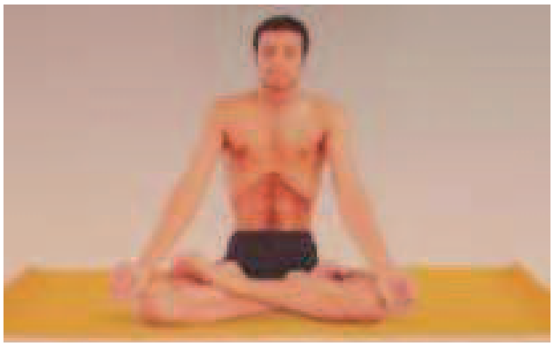


Fig.22.14: Uddiyan Bandha

Method

1. Sit erect in any meditative asan and keep palms on the knees. Relax whole body by closing the eyes.
2. Inhale slowly and gradually then exhale completely so that abdomen moves inwards as much as possible with one breath.
3. Then perform Jalandar bandha.
4. Upper abdomen moves inwards underneath the rib cage with chest moving outwards is called Uddiyana bandha.
5. Hold this position comfortably as long as possible.

Benefits

1. It stimulates digestive system and helps in constipation.
2. It stimulates the pancreas and is helpful for diabetes.
3. It strengthens the abdominal muscles & immune system.
4. Balances the mind and anger and depressive mood.

Precautions

1. Avoid in high blood pressure, heart disease, hernia & glaucoma.
2. Avoid in menstruation, pregnancy, duodenal & peptic ulcers.

Note

Moola Bandha- The Root Lock

The Sanskrit word Moola means 'base, root, and bottom'; Bandha means 'restrain, hold, lock or closed'. It is also known as 'root lock'. It is related to the subtle body. Its physical counterpart is the perineum muscle, which is located between the anus and the genitals and moves in an upward direction.

Method:

1. Sit erect in Siddhasana, pressing the perineum with the left heel.
2. Look straight ahead and take a deep breath.
3. Exhale slowly and as the abdomen contracts, close the anal sphincters tightly & continuously and then draw them upwards.
4. Hold the contraction for five to ten seconds or as long as possible without discomfort.
5. Inhale slowly and relax the anal muscles slowly.

Benefits

1. It tones the digestive system, reproductive organs, and perineum and can help women with painful periods.
2. Moola bandha essentially prepares for a spiritual awakening by activating root chakra.

Duration

Perform five turns in the beginning and increase by one turn every week up to a maximum of ten turns for gaining the maximum amount of physical benefit. Relax for about five seconds between the contractions.

Precautions

1. Avoid in high blood pressure, heart disease or any major diseases.
2. Should not be done in case of bleeding per rectum.

INTEXT QUESTIONS 22.5

A. Fill in the Blanks with appropriate words:

1. Bandhas are the …….. that are held by tightening and lifting of certain muscles of the body.

Note

2. The three main bandhas are……..,………and ………..

3. Jalandhar Bandh is also known as……….

4. Thyroid and parathyroid glands are stimulated by…………

5. In……….bandha upper abdomen moves inwards underneath the rib cage with chest moving outwards.

B. Mark the following as True or False

1. Uddiyan bandha can be practised in duodenal and peptic ulcer disease. ( )

2. Moola Bandha is also known as the root lock. ( )

3. Maha bandha is the combination of any two Bandha together. ( )

WHAT YOU HAVE LEARNT

In this lesson we have learnt:

- Practice of Mudra and Bandha is considered to be more effective than practice of asan and Pranayam.
- Mudra is a symbolic gesture used in yog. There are various types of mudras and each type has a specific effect on the body and mind.
- Touching the fingers of hand in different positions is known as Hast Mudra. In Hast Mudra each finger of the hand represents each element.
- Mudras which are performed as postures are called Asan mudra. This includes Maha mudra, Vipareet Karani and Ashwani Mudra.
- Mudras which are performed with face are called Mukh mudra. Shambhavi mudra, kaki mudra comes under Mukh Mudra.
- The bandhas are an important part of asana practice. Bandhas are the 'body locks' that are held by tightening and lifting certain muscles. There are three main bandhas: **Jaladhara bandha** (throat), **Uddiyana bandha** (abdomen) and **Moola bandha** (located in the perineum). **Maha bandha** is the combination of all three bandhas together.

TERMINAL QUESTIONS

1. Define Mudra.

Note

2. Which mudra is called King among all the mudras?
3. Write the benefits of Vipareet Karni mudra.
4. Explain the method of Maha mudra.
5. What is meant by Shambhavi mudra?
6. Explain the meaning of Bandha.
7. Describe the benefits of Uddiyana Bandha.
8. How many types of bandhas are included in Mahabandha? Explain.
9. Explain the precautions of Jalandhar Bandha.
10. List the benefits of Moola Bandha.

ANSWERS TO INTEXT QUESTIONS

22.1

A.

1. Mudra
2. Hand
3. 10 and 25

22.2 A.

1.b 2.e 3.c 4.d 5.a

B.

1. Gyan
2. Vayu Mudra
3. Thumb and index
4. Surya Mudra
5. Surya and Linga
6. Prithvi
7. Dryness, Dehydration of the body
8. 30-45

22.3

A.

1. Asana Mudra
2. Mahamudra, centre
3. 90, 45

B.

1. Right
2. Right
3. Wrong

22.4

A.

1. Mukha
2. Shambhavi
3. Kaki

22.5

A.

1. Body locks
2. Jalandhar, Uddiyan and Moola Bandha
3. Chin Lock
4. Jalandhar Bandha
5. Uddiyan

B.

1. Wrong
2. Right
3. Wrong